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Housing—Where, When, and How?

By Henry Wright

Editor's Note:—A discussion of Housing at the San Antonio Convention of the American Institute of Architects first crystallized in Henry Wright's mind the need, for the use of the profession, of a manual of good housing practice. At that same convention, in the president's address, Robert D. Kohn said: ". . . we know now that we need to understand the relations of architects as a group with the larger world of things. We must ask ourselves, what is the place of the architect as a citizen in this changing world by reason of his being an architect? . . . Our effort must be to make every architect conscious of the importance of the functions he performs, of the opportunities it offers and the obligations it imposes in every civic relationship, and conscious of the reforms that must be brought about in his own function in order that he may meet his obligations to those other many interrelated and interdependent functions."

Those were, in the light of events since transpired, prophetic words. And Mr. Kohn went on to say: "We must recognize ourselves as being part of a guild devoted to an art which can only be advanced as the whole group of its workers advances."

The publication herewith of Mr. Wright's conclusions from his years of studying housing is in line with this guild idea. With a tremendous task of building ahead of us, it is only by sharing the fruits of our knowledge and experience without reserve, that we shall avoid a maze of error and really justify our profession.

Half of the present issue of Architecture and half of the August number are given over to what is in effect a Manual of Housing. With the addition of further material—most of it specific "case histories"—the whole will shortly be brought out in book form under the title "How Shall We House?" by Henry Wright.

A FOREWORD BY LEWIS MUMFORD

WHETHER new housing shall be undertaken on a large scale is no longer a question. The present housing shortage, concealed only by the doubling up of families and the tightening up of living space, leaves only one answer. Whether this new housing shall be aided by the Federal Government and whether it shall embody new standards of design is also no longer a question. For housing for the lower-income groups has a major place on the government's program for economic reconstruction.

The problems that face us today are: Where shall we begin? In what order shall we rehouse our present population? How shall we proceed? What methods and standards shall we put into effect? To approach these problems intelligently we must first examine the actual housing conditions that prevail today in America, particularly as a result of the methods and purposes that have prevailed during the last forty years. Most of our discussions of housing have ignored the dominant housing types in present-day America, just as our statistics have tended to conceal their existence. But in providing for a new set-up in housing, we can learn perhaps more from our widespread bad housing than we can from our occasional good examples. We must first define "Where?" and "For Whom?" and upon this fresh basis we may then intelligently describe "How?" and "What?"

Part One

OF WHAT DOES OUR PRESENT HOUSING CONSIST?

I. THE BLIGHT OF OUR CITIES

WHAT we show the visitor to our cities is the tall apartment hotel mirrored in the lake in the park; what the social worker struggles with is the dark, foul hallway down in the slums; but the main problem of those who are interested in the nation's housing lies in neither of these. Slum clearance is most urgently needed. Our slums are among the world's worst, and the indictment against them cannot be softened by mere familiarity or by the passing of time. Yet cool observation coming to the aid of sentiment discovers the nub of the problem elsewhere.

Our present efforts at slum clearance resemble the attempt to bail out a river that is constantly swelling through neglect and erosion along a hundred tributaries. It is the whole network of our housing production that we must examine. We shall find that large quantities—almost the largest—of our regular "middle-class" output are flowing inevitably toward the muddy marshes. Our undertaking must be to survey and then try to redirect certain major streams in the flow of real-estate and building enterprises. Otherwise the social agencies dealing with the ultimate slum will continue to find themselves swamped.

In the terms more usually employed, the slum represents an advanced case of "blight." The committee which dealt with the related subjects for President Hoover's Conference on Home Building and Home Ownership made the distinction that the slum is mainly a social problem, while blight is still mainly a problem in economics. In the field of public health we have developed the idea of preventive medicine, which is not content to deal with a disease in its early stages but is concerned that not even these first stages shall arise. We now require a science of slum-preventive housing. In such a science, the slum is recognized as a derelict. Its incipient stage is blight, and blight may on occasion be detected by the keen eye of the housing doctor in those very regions where, to the average citizen and even to the incautious real-estate operator or investment company, everything still looks prosperous and rosy. The future slum may on occasion be located on the precise spot where we today are probably showing visitors tall apartment houses mirrored in lakes in the park. Any book which takes up the question of "how we shall house" must find out the reason why. Not even the wealthiest of our people are absolutely protected against discovering themselves in a blighted neighborhood. We must discover how the blight we already have can be cured before it goes into the slum stage; we must be even more concerned to find out how blight may be prevented at the outset.

BLIGHT CAUSED BY MISTAKES

The first cause of blight lies in population shifts and the changing needs of industry. Considering the unplanned manner in which American cities have grown, the greatest cause for surprise is that any district in them can manage to retain its identity for any length of time. The most chronic forms of blight, however, are the result of misconceptions, all the deeper in that they are unconscious. The most prevalent of these is concerned with the inherent deficiencies of residential areas in the interiors of our cities which have been "left behind" as these cities have expanded at the periphery and developed new suburbs. It has heretofore been argued that such interior areas, although temporarily sick, would soon be rescued by the expansion of industry, which would absorb them into a new industrial or commercial use. But of late industry has expanded vertically instead of horizontally; it has been sucked up from its many lofts into few skyscrapers, so that instead of covering more ground it has come actually to cover less; meanwhile it has been producing more goods, faster, with better and fewer machines, occupying less space per unit produced, even within the taller, narrower building. So we must speak today of "technological unemployment" not only of workers but of the land: more and more land has been "thrown out of work." Hence those large ailing residential areas surrounding the central core, which have been "waiting for the city to catch up to them," not only have been left to their stagnancy but have commenced to expand inwards toward the centre, like mud flats surrounding a receding lake. We can no longer be content, therefore, to try temporarily zoning them, any more than a doctor could be content to zone his patients into especially segregated groups so they might be a little less conspicuous while their condition steadily grew worse.

The second prolific cause of blight lies in the wholesale erection of buildings of a grossly inefficient type.

It is only as one travels the length and breadth of our cities and their suburbs that he begins to realize the havoc that has been wrought. Horrified at the results of their survey, the editors of a leading magazine of business put the whole process under the heading of a "racket." But this in turn must have shocked those honest business men involved in marketing and financing dwellings, who are conscious of being no worse than the next fellow and who are sincerely convinced that they are "giving the public what it wants." As indeed they are! For how could the public ever know that there was anything better which it could "want"—and might *get* if this want were sufficiently insistent? Were the prospective buyer to tell the salesman that he wanted, for a price within the middle range of incomes, an ample lot, a clear view, a playground for his children, cross ventilation and sunlight in every room, and no narrow alleys or courts—all implying no more than a reasonable standard for decent living—the salesman would reply, as politely as he could, that unfortunately all this could be had only for three times the money. This reply should not dismiss the question, only leaving the buyer feeling foolish. Most buyers are too modest in advance. The public can "want"—that is, it can buy—only the best that is offered at the price within reach. It can want and buy nothing better. So the circle is complete. If all the builders in a district are offering a stupid kind of house, then that is the kind of a house the public will buy; and since actual purchases are considered the best guide for determining what the public wants, the builders will prove to themselves once more that the public "wants" this stupid kind of house.

Unfortunately for the builder or owner involved, the worst stupidities draw their Nemeses after them in the form of blight; but fortunately for those interested in improvement, a standard vastly higher than that of the average commercial builder proves itself not only practical but often more profitable in the long run, when all costs are finally covered.

Summarizing, we find that in considering blight we are concerned with two major types of problems, one involving city planning and concerned with population trends and wants; the other concerned with general types of buildings produced and their basic fitness for modern life.

THE SPREAD OF BLIGHT

Blighted areas have continued to spread in our cities because:

1. Many of these districts were built in a wholesale and slipshod fashion that rendered them inherently blighted at the outset.

2. No new public interest, leading to new building investment, has been recently devoted to these older districts. They represent fully exploited opportunities; they have been milked dry and abandoned by the real-estate procession.

From the business point of view it has been easier to neglect the older sections in favor of new developments on "unspoiled" land. This would be more defensible from the standpoint of public policy if our new communities were definitely cheaper, more modern, or more desirable than the old; provided, also, that the city were in a financial position to extend the new streets, sewers, and other services which it would have to maintain, not in place of the old ones, but in addition to them. But most of our new communities partake of all the defects that have caused the older ones to deteriorate, and, by postponing many of their public-service costs, have kept concealed, until recently, the fact that cities by overexpanding their services indefinitely are headed for bankruptcy. Meanwhile great areas within the older city remain stagnant and their assessable values no longer carry their costs in city services.

3. No one has been concerned with the idea of evolving new methods for completing or rebuilding these districts in terms of a more modern technology. No technical resources have arisen—or, more correctly, none have been commercially recognized—to provide new *forms* of dwellings of a more economical type suited to filling in the vacancies and to rebuilding the better located parts of these arrested areas for the use of those who might yet be conveniently served in these districts.

Therefore we find that our blighted areas are now spreading, not so much because new competing communities are really better or more attractive, as because the older areas are completely neglected. Yet it will frequently be discovered that many of these older areas of small multi-family or row dwellings constituted in their time an economically effective form of new substantial construction, which in terms of then current incomes came much closer to meeting the needs of their time than most of the product of the post-war "prosperity" era. While these dwellings fell short of certain desirable qualities, yet at the time they were built they could at least be rented or sold within the means of a large proportion of those clerically or industrially employed. Their construction was fairly sound and their municipal equipment was generally more nearly complete than in most of our recent speculative areas. We do not suggest a return to the era of the speculative "flat" (see note and illustrations below) because of its wastefulness both in land use and in building plan, but rather to find a new form of housing that will apply more recent technical advancement and yet similarly conform to rent-paying ability of city families. This is one of the chief objectives of the present study.

BLIGHT VS. SLUMS—THE CONDITIONS COMPARED

Before proceeding further with the consideration of blight, it may be well to suggest its relation to the problem of slum clearance. The latter is far more popular in recent and current housing discussion. It would indeed be a fine thing if slum clearance on a large scale might be accomplished. Yet after the most courageous and insistent efforts it has not been brought about, and is not likely to be brought about for a long time to come. The difficulties are entirely practical. In a great many instances of blight, most of the devices that would save it are ready to hand, awaiting only correct analysis and good planning. In the case of slums the present obstacles are seemingly insuperable.

The great and inhibiting problem of slum clearance is the assembly of land, and this problem has two distinct aspects of practical difficulty: one is the high speculative appeal of slum areas, land being held for a future advance in value due to change of use. The other is that the first piece of slum clearance and new building so stimulates the surrounding land values as to defeat its own repetition. In point of fact, there should be ample evidence now to satisfy any thinking business man that it is unprofitable any longer to speculate in areas bordering on a central business section that is now receding. Yet there has as yet not been sufficient appreciation of this situation by owners to cause a real break in holding prices to levels necessary for housing use. Until this appreciation is widespread, all efforts for slum clearance on a large scale are futile, if not actually self-blocking in their tendency.

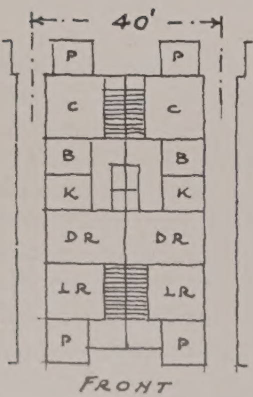
There is no doubt that the cause of housing has been held back by some of those who have

WHAT IS A FLAT?—The term "flat" will frequently be used in this study. To make its meaning entirely clear to those living in sections where either the flat does not exist, or is known by other names, it should be explained at once that a flat is a form of dwelling, all on one floor, in a building with at least two such dwellings, one above the other.

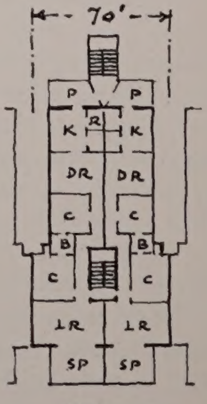
The rooms of each such dwelling are in tandem, running through from front to back. In its simplest form, with just one dwelling above another one, the building containing such accommodations is itself called a flat, with no distinguishing adjectives. Sometimes, however, two such building units are doubled along a party wall, resulting in a "double flat," or more specifically a "double two-family" or "four-family flat." A three-story form, accommodating three families, also exists in the single and double type. (This form is generally listed in the statistics not as a flat, but as a "multi-family" dwelling. A flat it nevertheless remains.)

This breed of dwelling is a most prolific one, and constitutes 75 per cent of all dwellings in Chicago, and nearly as great a proportion in St. Louis. In Bridgeport, Conn., in the form of a wooden building, it provides the cheap form of low-cost housing, and it abounds in many other cities of the United States.

The ungainly four-family and six-family types of St. Louis and Chicago are shown at left and right. In the Chicago example the plan of the first or half-basement floor provides a central hallway reaching the inside stairs.



St. Louis



Chicago

been placed in positions of responsibility for the purpose of speeding a large-scale and presumably public-spirited procedure. These persons have undoubtedly been sincere. Nevertheless, their daily interests being directed to problems of banking and investment, they have had an "investment" attitude toward the problem. They have been more concerned with "saving" the slums as a form of property investment than with eradicating them by the only practical means—the means of deflating the almost universally false "investment" values at which land is held. Thus the evacuation from 1925 to 1930 of 57 per cent of the former population of the famous New York East Side has aroused great concern for rebuilding, not because it caused a sufficient depression of land values to make rebuilding thinkable, but for fear that these values would decline still further. Now they may be arrested before reaching the point at which housing might conceivably take place.

There is widespread lack of understanding among housing advocates of the specialized problem of the slum in other cities and other slum areas that are more typical than the New York East Side.* Elsewhere slums are found not exclusively in districts built as cheap tenements, but quite as often the slum forms in an area once used for fine residences from which the former population has entirely migrated. The buildings suffer not so much from age as from inappropriate use, and the rents paid may be anything from very low to relatively high.

The present low-grade occupancy is thought of by the owner as a temporary one. He expects to be approached some day by an agent assembling land for a business block—maybe a skyscraper. Yet there is no real necessity for a congested use of such areas. Comprehensive plans for city rehabilitation may be based upon the fact that in most cities we have *more than enough room for everybody without crowding.* The greatest loss in trying to push slum clearance when land values are not fully liquidated is that we continue to crowd people into these areas when there is no necessity for it. We thus oblige ourselves to concentrate our planning efforts within a deadly restricting atmosphere in which "tight" planning, intended to meet high land costs and yet to house people of small means, stultifies our thoughts and constricts our methods, which might otherwise be released to do a real job.

Slum clearance is drastically needed; it has been thoroughly discussed; but in this country it has practically never been carried out. It is held back chiefly because our foolish timidity in placing private property rights above the public welfare makes it possible for a few owners to hold up the agency attempting the assembly of adequate sites, and housing as an enterprise has been powerless to overcome this handicap. Fortunately housing has at last been recognized in certain States as a "public utility" entitled to the right of eminent domain. No successful application of these new powers has as yet been effected, but the opportunity remains.

To a certain extent our tax system has helped to obstruct the downward trend of slum land prices. People holding for long-term increment have been willing to pay taxes without relation to present earning values, and the resultant assessed valuations on speculative prices have tended to fix these values as established and to encourage their unreality. The high assessment helps appearances. And, finally, in paying these high assessments and other "carrying costs" the owner has put in so much money that by now anything less than the skyscraper apartment or business-block price looks to him like a positive loss!

Such is the situation that slum-clearance students have felt themselves bound to accept. In every instance they have had to base their calculations on this speculative "value" of the land. And so they have chivalrously fought on unchosen ground. They are finding that they cannot win. Despite many efforts in New York and elsewhere, practically no genuine slum-clearance project has yet been carried out that replaced old dwellings with new.

There is, in fact, no magic formula by which low-cost housing can be produced in a way to absorb high land costs. In 1928 I helped to make studies for the New York Housing Board, and these confirmed previous reports that practically no land on Manhattan could be found at a land cost low enough to permit the construction of new dwellings to rent for $12.50 or less per room per month in five-story walk-ups.*

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* The famous East Side slums of New York, instead of being typical, are entirely unique. They are the only slums virtually built as such, to accommodate the transient population of the great immigration era. Elsewhere slums are purely accidental. It is most unfortunate that our popular notion of slums and their correction should be so largely centred on the highly specialized problems of the least typical American city.

* It should perhaps be explained that the New York Housing Law at the time of these studies permitted tax exemption to be given to limited-dividend projects on Manhattan renting for not to exceed $12.50 per room per month, bathrooms not counted. Some concessions have since then been incorporated in the law to permit the rent actually to be higher. But the rent-paying ability of the average family has in the meantime receded to a

Since five stories had become the maximum number acceptable for walk-up apartments, it was decided, in the studies mentioned, to draw up the East Side slum-clearance projects on the basis of higher elevator buildings. Further investigations, however, revealed the disconcerting fact that the greater height and the elevators brought no gain. The simple reason was that, so long as the rent was held to $12.50 (in tax-exempt apartments), the increased cost of the higher construction, the cost of the space given to elevators, and the cost of maintaining them, all keep pace with the savings on the land that result from more stories of height. If standards of light and air are kept even remotely commensurate, we are warranted in the statement that no desirable low-cost housing can be built on land above $5 per square foot in Manhattan, or at a much lower maximum figure in other cities where rentals are far from equal to rentals in New York.

It is really time for housing students to stop playing the magician. Instead of trying by some trick of planning to maintain impossible land prices, let them see that the problem is set up in terms that can be solved. The highest rentals that can reasonably be expected from any large-scale development stand within limits that can be ascertained. Bearing in mind the top limit of rent to be received, let us design buildings which, within that limit, are the most economical to build and to maintain. If the rent must be held within a limit, and the building cost is known, it is easy to discover what is the top price that can be paid for land. Beyond this price no land can be used for the purpose. If prices asked are higher, there is nothing the technician can do about it. He is not responsible for the mistakes of speculation. If suitably priced land cannot be found in one region, then search must be made in another, and if it cannot be found there, then nothing can be done until land prices come down. In fact, those wishing to promote building activity are beginning to discover that their interest lies not in bolstering up land prices but in seeing them come down to a point at which profitable buildings can be erected and maintained. Even city assessors are beginning to realize that a safe tax budget is based upon taxes from earnings, not from anticipations.

If the designer takes this position, he will soon find that the whole trend plays into his hands. It is daily more evident that the skyscraper or business block for which the slum landholder is waiting is not going to come.

THE RINGS OF CITY GROWTH

The accompanying diagrams show the process by which slum areas have become fixed by the outward spread of cities, finally augmented by the inward shrinkage of commercial districts.* It seems to follow that these slums are either to remain or are to be replaced only by housing. If they are to be replaced, their land values must eventually be deflated to a figure at which housing on a large scale can be built to take their place; and housing on a large scale can be successfully built only for rents that a large number of families can pay. While certain limited sections can be utilized for better-class apartments, most of these areas must be rebuilt for the moderate-rental groups and must await the time when the recognition of these facts is reflected in prices. Unfortunately the downward trend is likely to be arrested by a situation in which wholesale unloading on the government at the present, partially deflated, prices may arrest this liquidating process. The situation is one of those

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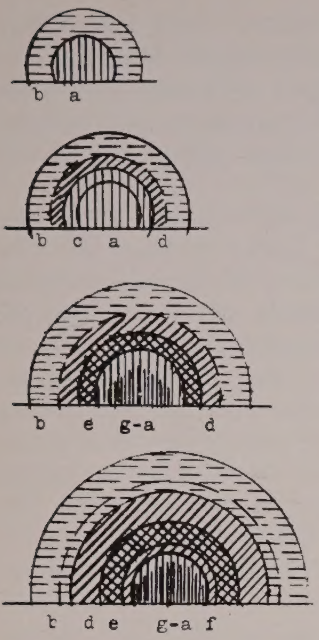
point where even $12.50 is an impossible figure. The change thus has a double-headed aspect. The raising of the legal minimum has made certain recent slum-clearance projects seemingly possible. The decline in actual incomes on the contrary has meant that we have departed still further from the avowed goal of slum-clearance activities, which is to provide housing for those of moderate incomes.

There is one project in New York, the Grand Street apartments of the Amalgamated Clothing Workers, that would appear to contradict the above. It should therefore perhaps be explained that it forms an exception, for the reason that the land it occupies did not have to be cleared of old houses but was formerly taken up by one large printing plant. It therefore required no assembling. Despite these advantages, the rentals—or net monthly costs to the co-operative owners—have been held down to $12.50 only by virtue of the fact that these co-operators accept practically no return on their part-purchase money required in the co-operative plan.

The chief reason that it has *appeared* possible to cover high land costs by means of high elevator buildings has lain in certain calculations relating to maintenance. There are a few housing projects built under the auspices of the New York Housing Board, and occupied by groups of co-operative workers' organizations, that have been able over a short period of years to maintain their new apartments, including elevator service, at costs fully 33 per cent lower than the average good commercial practice elsewhere. On this basis a total maintenance cost has become currently admissible of only about $40 per room. This figure is used in theoretical set-ups, not only for the six-story heights that obtain in the instances cited, but even for ten or twelve stories, where costs in actual experience are still greater, reaching usually to nearly twice the amount assumed for certain proposed projects. Unfortunately no one has yet been able to make it clear why an apartment with a plan almost the equivalent of high-class apartments in Upper Manhattan could, simply by virtue of being transferred to the East Side, be both built and maintained at costs far below the normal elsewhere.

* These and other diagrams appear in an article by the author in the *Survey Graphic* for August, 1933, which more fully expounds the reasons for anticipating a further shrinkage of slum values.



a. Commerce and light industry
b. Active residential area
c. Extension of commerce and light industry
d. Inactive residential area and blight
e. Actual slum areas
f. Inactive commerce and light industry
g. Vertical expansion in high buildings

The diagrams at left show the typical spread of modern American cities and the accumulation of increased areas of blight and slums. At top, the primitive city; next, concentric expansion; third, arrested growth of centre by vertical expansion; and, last, the central area shrinking, due to further vertical growth and lessened space needs

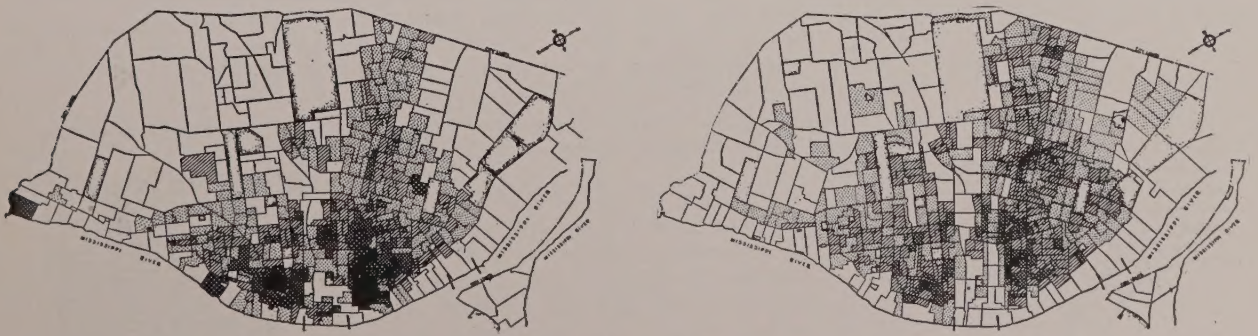
anomalous ones in which the socially minded effort is defeated, as it so often is, by impatience to achieve results. A neat turn on the part of adroit business interests enables them to capitalize once more on the very propaganda of our progressive groups.

While these diagrams cannot convey the whole complicated situation at the present time, they are indicative of the broad underlying factors involved in city rehabilitation. These factors are considered later in discussing a choice between slum clearance and an attack on blighted areas, as the opening wedge in the whole process.

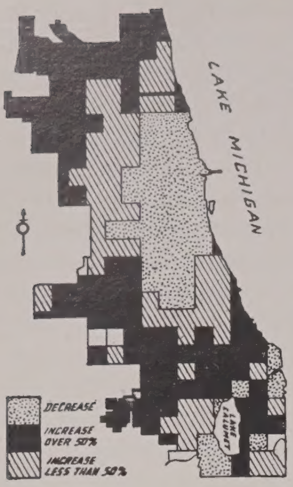
There are, of course, no sharp lines of demarcation corresponding with the districts indicated in these generalized diagrams. In cities such as Philadelphia and Baltimore the distinction is not between districts composed of tenement houses and a surrounding belt of smaller types of dwellings, but between districts of dilapidated row houses and a contiguous group of somewhat less crowded and dilapidated row houses. In Chicago these concentric circles alternate between frame houses and larger brick flats marking successive original layers of outward expansion and different degrees of present blight. In Cleveland the vast blighted areas that have almost isolated the city centre from its newer suburbs are made up of a widely varied motley of old wooden houses and more recent brick and wooden flats.

More frequently than otherwise these areas have for some time past been subject to losses in population, so that the problem of congestion is less severe than that of bad and unsanitary physical conditions.

Most usually, then, our worst slum conditions arise from altered or transitional neighborhood uses. Dilapidation arising from neglect is as frequent as any bad character in the buildings themselves. There are, nevertheless, other instances in which stagnant areas have developed out of the underlying street pattern or the city plan. In such instances as the one at Evansville here illustrated, and in the more widely spread Dallas slums, the infection has arisen at bad spots in the city pattern. In New Orleans, on the other hand, vast areas have a neglected slummy character arising from a faulty subdivision of the land that is also common to other cities of the South. Salt Lake City suffers from an even larger square block of somewhat different character.



Maps of the city of St. Louis: at left, 1910; at right, 1930. These show the population density for the two periods. White areas represent less than 20 persons to the acre; full black areas, more than 120 to the acre. In the 1930 map, the latter areas have almost altogether disappeared



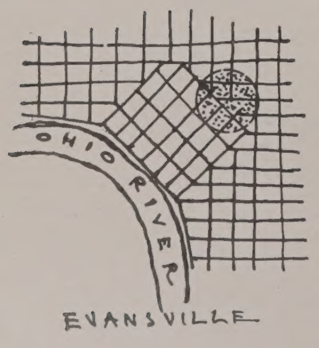
Map of Chicago, showing the increase in population per square mile between 1920 and 1930—a flight of population from the interior areas. Here, as in St. Louis (maps on preceding page), the expectation that residences would be replaced with commercial or industrial buildings has not been fulfilled, the spread of commercial districts having been arrested by vertical increases and by the technological reduction of space needs for industry

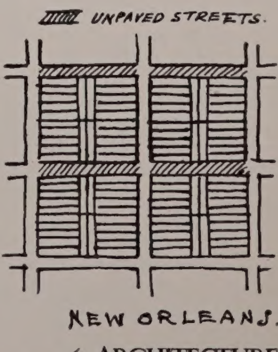
There are therefore slum areas of one kind or another to be found in almost every city. Such attention as has been given to the subject of housing has been aroused by the conditions within these areas. It has usually been centred on questions of human misery, crime, and disease, that have very often coincided in location with the slums. Slum clearance has been considered primarily a humanitarian problem, and has been chiefly the concern of social workers in an appeal to philanthropic agencies. But declining faith in these slow philanthropic processes has led to the thought of slum clearance as a municipal responsibility, entitled to at least such aid as the city might give through its borrowing power at low interest rates. Failing this, tax exemption has been resorted to. It is natural that under such agencies and conditions the thought has been concerned with minimal standards; it has been taken for granted that those now living in the area should be the beneficiaries of the new housing, in the same place. This assumption has led to the futile attempts at cheap housing on expensive land; land crowding and room crowding have been the natural result, and low standards have also been taken almost for granted.

While the problems of the slums and the fate of the lowest-income group cannot be altogether segregated, need it follow that the poor people in the slums should always be rehoused in the *same* area after rehabilitation? When the slum buildings are torn down, these people are obliged to move out: need we make certain that when the new buildings are up they shall move back? Two parties are involved in the operation, the city and the slum dwellers. The city may find that the particular district in question is so well related to a business centre or to other special conveniences (such as a view across a river) as to make it a logical place for a higher-income tenancy really able to pay for the new buildings as well as the actual values reflected in the higher land price. To choose this location for occupation by an illogical type might represent altogether too large a loss for the city. If the previous occupants move out, where then will they go? There is some validity in the claim that they will take up better dwellings elsewhere made vacant by a general shift up as the higher-income groups move into the restored area. Moreover it is truly held that in any long-term program there must always be a fairly large group occupying second-hand accommodations. Yet to say this does not dispose of the problem. For it takes care of only half the slum problem. Slums occur, it is true, in bad dwellings in which there is overcrowding, lack of sunshine, air, and green space; and from the worst

SLUM INCUBATORS—Slums frequently are mere aggregations of poor dwellings which have accumulated in some back-wash of the city, or which are the result of conditions caused by bad land subdivision. Thus at Evansville, Ind., where the original town took a natural relation to the river landing, with streets on the diagonal, the later enterprising engineers insisted upon reverting to the customary compass direction, and produced a mix-up at the junction of the two periods which was so confusing that streets remained unpaved and unfrequented. Here naturally grew the Negro slum of the city.

Again in New Orleans the type of square-block subdivision inherited from slave-owning days resulted in very narrow deep lots which tempted the building of rear houses—sometimes three deep. The cross streets, with only two frontage lots on each side per block, remained dirty and unpaved because there were not enough interested properties to pay for the improvement. The result is a widespread slum in the lower-cost areas.





of these quarters the slum dwellers will have moved away. Yet the second factor in the slum situation is the group of people who cannot *afford* suitable space to live in; and even if these people are moved out of the slums they will still have to move into quarters not properly adapted to them. And there are plenty such that they will still be able to find, even among the many fairly recent flats of our usual types. If families unable to pay the rents for a complete dwelling double up in such deficient buildings they will quickly make new slums out of them! And even though decent conditions at the start, with a modicum of light and openness, will draw a response from such families, yet their crowding will eventually result in slums, whether the dwellings were originally good or bad.

We are therefore not out of the woods until the situation has been attacked from both sides. On the one hand all inferior dwellings, even outside the present slums, represent a potential slum menace until replaced by new ones at least reasonably well planned. On the other hand, no matter what we do about the location for the low-income families—whether we decide to rehouse them where they are, or whether we force them out where in the end a smaller subsidy will enable them to have sufficient space in less valuable quarters—this low-income group must in any event be subsidized. If they are not subsidized, their income must be increased, if we are to avoid slums in the long run.

It may also be found that it is more effective to care for the lowest-income groups by planning new dwellings for them in the proper places, with suitable standards of room size and space arrangement, rather than to leave them to live awkwardly and wastefully in old houses with large rooms and high ceilings or other unadaptable features. This entails new building, with moderate subsidy, even though it does *not* contemplate placing the new buildings where the slums now are.

It is probably true that we have the largest and some of the worst slums in the world, but these arise chiefly, except in New York, from rapid changes and shifts in population, and a too rapid outward expansion of our cities, rather than from long-standing class distinctions or ancient habit. Physically our slum clearance should be relatively easier than in other countries. In most instances it should be possible to rebuild for a population at least equal to the present number of occupants, while at the same time making the most ample provision for open space requirements.

A more thorough understanding of these varied characteristics should make it possible at the opportune time to make our slum-clearance job a really comprehensive one; then we may not only provide better housing for the sake of the families to be housed, but also see the slums cleared for the purpose of restoring the assessment values of cities, and the re-creation of desirable conditions in the heart of our cities to provide the greatest convenience and satisfaction to all.

The position of the author in cautioning against a too ready acceptance of slum clearance on its face value, should not be misconstrued. He is not opposed to slum clearance, he is for it in every possible and practicable way. There is, however, need for the greatest caution in judging the progress of all projects which really attempt to clear the slums. As far as they furnish drastically needed employment they may, at this time, be excused some of their other shortcomings. Some of them have been started under favorable conditions and fairly reasonable land costs. Others are not so favorable, and it will be necessary as the work expands to keep the closest scrutiny to see that slum clearance is not merely made the means to "unload" on the government unfortunate speculative or investment holdings on which the owners may otherwise have to take drastic though well-deserved losses.

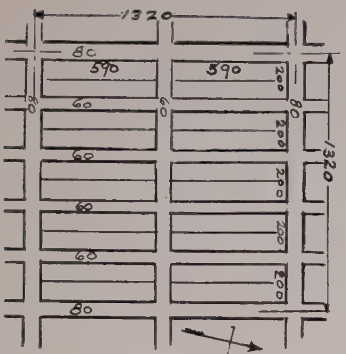
In order to place the elements of a broad-minded, long-time program before the reader, Chapter II attempts to develop the broad aspects of a far-sighted program of housing, if present-day cities are to continue and resist the possibilities of complete abandonment in favor of new, modernized communities.

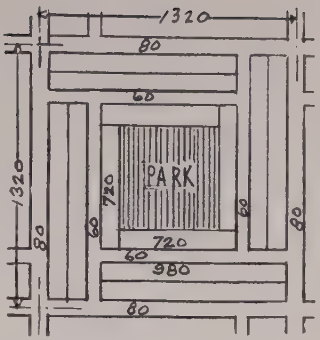
II. WHERE SHALL WE HOUSE?

WHILE slum clearance and the problem of ever-increasing blighted or stagnant areas must be linked closely together, the latter should no longer be overshadowed by its more popular rival. These blighted areas form the next outward belt of city expansion and entail many similar losses to city tax budgets. They also carry the cost of increased transportation and utility mains that do them no good but lead through them to the newer areas beyond. The problem of the blighted areas is one covering a much vaster physical area than the slum. Yet it is one that may be readily and comprehensively undertaken at this time because of the comparatively low land prices which are inherent in the greater and rapidly increasing areas involved. The existence of these blighted areas and the rapid obsolescence within them arise from a series of factors different from those prevailing in the acclimated slums. The types of dwellings that occupy our intermediate blighted districts are usually two. The first is the narrow row house. The second is the makeshift kind of smaller multi-family dwellings that was invented to take up the increasing costs of physical services of city land subdivision in that period of rapid urban expansion which started with the turn of the new century. They represent, for the most part, fairly solid construction in communities in which the city service plant is fairly modern and complete (streets, utilities, schools, etc.), and they are, usually, less wasteful in point of scattered lot occupancy than the housing of the post-war period. Their defects lie, first, in the universally deficient and inefficient planning of their dwelling types, and second, in the extent of their continuous repetitive design over long stretches of monotonous streets. Behind the speculative activities of the post-war land subdivision there lies a very real urge to get to the open country so as to get away from the drabness and sameness of the old parts of the city. Unfortunately, home seekers have not sufficiently reasoned out their desires to appreciate the fact that the open country which they have been buying in parcels 35 or 50 feet wide has all the seeds of the old monotonous regions that they hoped to escape. The new districts, if and when built up, merely repeat the old conditions and cause a new abandonment for newer, unspoiled fields beyond.

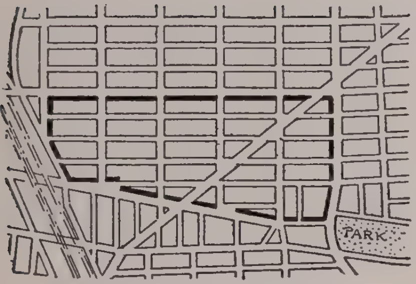
The existing situation in these vast areas is least understood and appreciated, first because their conditions are not really so bad as to excite public interest—they are not usually the centres of crime or disease as our worst slums are. Second, because their very vastness makes them less conspicuous, on the basis that "familiarity breeds contempt." They are those practically continuous districts of ugliness that we pass through while reading our morning papers on the trip from the suburbs to the city. We have less cause really to visit and appreciate them than the close-by slum district, which may lie more immediately in the path of our daily business transactions. Thus we know little of their real character and extent, and appreciate only vaguely the degree to which they represent the border line of respectability for countless numbers of our substantial working families. We fail to realize the extent to which their gradual deterioration threatens the financial security of the city and its ability to maintain the extended lines of communication upon which the maintenance of desirable conditions in the more fortunate outer rim must eventually depend. Finally, we have continued to overlook these areas because our lack of understanding has left us unprepared with appropriate forms of new dwellings, suitable for the intermediate requirements which lie between land so high in cost as to be almost impossible and land that has been considered low enough in cost to be almost thrown away in our extravagant suburbs. Like one enthusiast for "East Side" slum clearance, we have felt that "the difficulties of high land cost make the problem interesting and bring out our crusader spirit." What we need to see is the much finer opportunity for organized community development in these vaster areas of increasing blight.

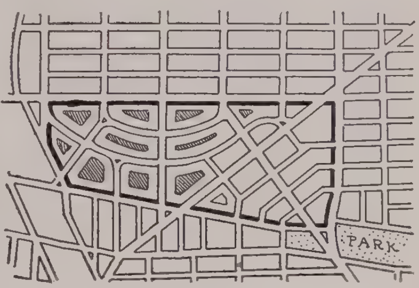
Slum clearance and the rehabilitation of blighted areas are, therefore, to some degree alternative or competitive problems; and the choice of beginning with one or the other is a matter of strategy as well as practicability. If fair progress on blighted areas should be made first, this will have the advantage of providing additional housing facilities not too far from those now living in the slums, nor necessarily inappropriate for them. This will not only relieve later slum clearance of the difficulty of providing





Too little attention has been given to the inexcusable wastefulness of our customary street pattern. At the Boston Convention of National Real Estate Boards in 1926 the author presented a large amount of evidence to this effect, resulting in a resolution recommending the use of longer blocks.
One of these studies showed that in a forty-acre tract, a quarter mile square (New York City basis of streets), a reorganization of streets would produce about 87 per cent as much property with less than 76 per cent as much street area, the land salable at less per foot for the same depth. There would remain in the suggested new plan six acres of park at no cost to the community





Here also is a proposed change in a particularly extravagant New York street pattern. At left, there are 20,660 lineal feet of streets with 25,000 feet of frontage. On the right, the plan provides 14,750 lineal feet of streets with 24,000 feet of frontage of the same depth. There are eight acres of land originally in streets transferred to the interior block parks. It is likely that many cases of city bankruptcy might have been avoided if these facts had been observed

for those evacuated, but also by evacuating them before clearance will hasten the fall in holding prices in slum land.

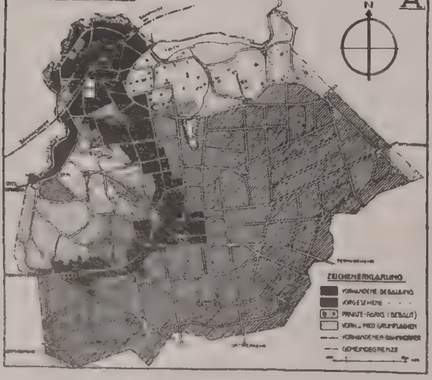
These two interlocking problems of slum clearance and blight rehabilitation are, therefore, inseparable in any really comprehensive treatment of our housing policies. In their solution the human factor of the unfortunate poor remains a weighty consideration, but the major problem becomes one in which the fate of the entire city is at stake. A new and important element has also entered into the picture. Our past ideas of city planning and city expansion have been based on a rapid growth of city population. This expectation has now not only been greatly reduced but has, in some cases, almost disappeared. To the fact of the rapid slowing down of the population growth of the country, evidenced in the 1930 census, has been added the breakdown of industry as the mainstay of labor absorption through new employment. Large numbers of families have been thrown out of our cities and back to the primitive life of self-support through direct contact with the soil. The only thing which keeps this from developing into a real and permanent evacuation of our cities is our general incompetence to make a living from the soil. Unfortunately, a good part of the population is too far removed from its agrarian antecedents—not so much in time as by the extent to which it has become altogether dependent upon the artificialities of urbanized existence. In this the European nations are far more fortunately situated and with them "back to the land" is no mere shibboleth.

At best, the growth of population in our cities as a whole is destined to be so reduced in its effect that certain choices as to city policies will shortly become essential. The problem will not be "how can we improve both our slums and blighted areas as well as the quality of our suburban expansion?" but a choice between outward growth and central rehabilitation. Any housing policy and any housing technique, to be of any lasting importance, must be based upon some practical anticipation of this essential choice. My own guess is that we are not going to be content to cut off all outward expansion; but on the other hand, if we dash about in uncertainty, first doing a little slum clearance, then rehabilitating a section of blight, and then improving our methods of land subdivision and expansion, with no co-ordinated purpose, we are going to end in chaos and a more general breakdown of our cities than anything suggested by our present difficulties.

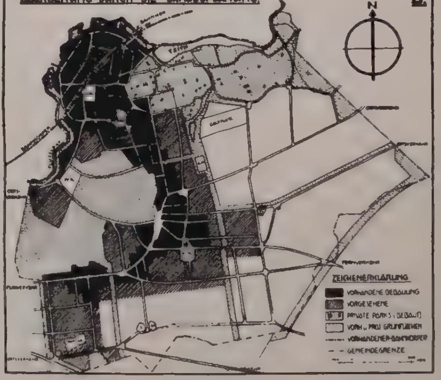
If, on the contrary, we are to make choices and so direct our city policies along some more promising lines, it will be necessary to consider the various regions and their advantages and possibilities in terms of present practicability and ultimate success. The problems involved are those of quantity, distribution and time, in which the time element is one of the most important to those interested in the subject of housing.

To recapitulate the typical development of many of our more recently established cities, particularly in the Central States, we have found that their growth can be represented by a series of widening concentric circles. We have added layer on layer, usually jumping one type of use over another. At first our suburban layer for homes, made possible by electric transit, left only the commercial and industrial areas to extend in its wake. The lag of such extension behind the outward expansion resulted in temporary slums or transitional occupancy between changes in use. But while our outward expansion increased in rapidity the central extension slowed down, due to new requirements of industry, which sought cheap land at the outskirts. Slums tended towards permanence and added a new layer of blight. Finally our central areas mounted skyward and actually *fell off* in required land area, shrinking away from the inner rim of the rotting slum area, thus not only increasing its extent but also adding abandoned warehouses to its derelict houses and tenements. To add to the waste and confusion, zoning ordinances set aside for commercial and industrial purposes from four to five times the area that could actually be used.

But regardless of either human needs or the abilities of cities to provide services within economic taxable revenues, we bonded the future, and outward extension went merrily on. It is indeed a backward city that cannot show, either within or on its borders, at least one vacant lot for each one occupied, while those that recently boasted of really being progressive provided paved streets, sewers, and even street lighting, for a large majority of these lots. Now, even if we can call a halt on further expansion, we cannot altogether abandon these existing areas and their ingenuous homesteaders. We must have a policy of consolidating and utilizing these vast expanses of suburban lots. There must also be a policy for rehabilitating those sections that, left behind in our blighted areas, are nevertheless important, since unfortunately they form a necessary physical link between the business area and the suburbs. A frank survey of the field will show that the one lacking element is likely to be a sufficient number of human beings to require all the potential space and facilities of the combined slums, blighted districts, and spotted suburbs. If we put all these various areas to their best use we shall have no reason for overcrowding in any one of them. To overcrowd in one part would mean depriving other areas of their logical and reasonable utilization. Our suburbs not only are overspacious but have far too extravagant provisions for public services. They have frequently been so platted that they might also be adequate to the possible requirements of rebuilding for future intensive use. Now that such future use is altogether improbable, such



Where we have overstepped the limits of reasonable future needs in connection with the land, platted areas must be vacated and returned to farm and garden usefulness, as has been done in certain German regions. Around Hamburg, on the recommendation of the Regional Planning Authority, nearly every smaller city has abandoned its over-platted areas, restoring them to agricultural use.



areas must be reassembled and replatted with a greatly reduced demand on the city for extravagant and inefficiently used streets, utilities, and transportation. For such a reduction we have ample precedents abroad and in a few communities, such as Radburn, at home.

Underlying the entire program of city reorganization and the proper treatment of these various use areas, there must be a very conscious effort toward redistribution of people with relation to their habitual *work places* and *daily movements;* we must undertake to reverse the former unguided program, which has first dispersed industry beyond the residential area and surrounded it with a fairly large proportion of its workers; and then in turn tried to jump all the executives and clerical workers over this industrial area out into the yet more distant and temporarily unspoiled suburbs. The great areas that have been left behind in the slum and inner blighted districts must be rehabilitated for a reasonably large portion of these central workers. In most cases they can be made equally attractive, if not more so, than most of the present suburban districts.

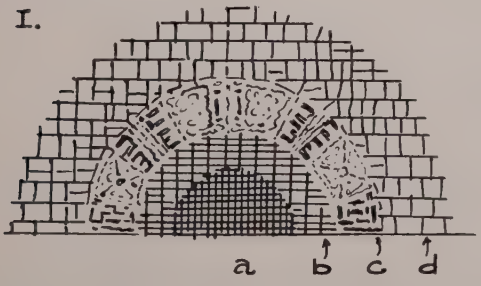
In such a program these inner areas may also be provided with very ample open spaces, essential to their permanently restored popularity. While we should not be so foolish as to try to transfer to this inner area the single-family, detached house-and-lot ideal that has formed the basis of outward expansion, the city must encourage a moderately efficient building type in these inner areas. At the same time it must invest sizable sums in providing very considerable open space and other amenities in order to assure a permanently agreeable character. This will encourage a stabilized use and assure taxable income. With such a broad policy, accompanied by superior technical development, the new housing of these areas should really compete for the choice of clerical workers and other central workers who now make great sacrifices to reach the suburbs. They will be far better served, and the city will further profit in the relief of the costly traffic and transit now required and still mounting, for the purpose of taking people from places where they have to be to other places to which they really need not go.

When we come to the final considerations that should control our broader program of general rehabilitation, we shall find that there are two possible and distinct choices. These are indicated on the accompanying diagrams and may be explained as follows:

I. We may rush our slum clearance *b* in in the face of land costs that have not declined to their true value limitation for housing purposes only. At the same time we begin the process of reassembling and replatting our suburbs *d* on new modern garden-city lines, with large blocks and fewer and smaller streets. If we do these two things thoroughly, we can hardly at the same time undertake an active campaign of rehabilitation in the blighted areas *c*.

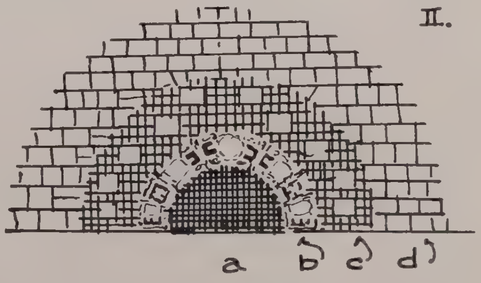
The objection to this course is that the slum program carried out on the present land-price level will require a fairly intensive use of these areas. This will not only mean that a larger percentage of our population must be housed in tenement buildings—or in model apartments, if you prefer—but, even with fairly ample open

I.



a. Commercial area
b. Slums area
c. Blighted areas
d. New residential area

II.



TWO ALTERNATIVE PROGRAMS OF LARGE CITY REORGANIZATION AND GENERAL REHABILITATION—Above, the scheme calls for slum areas (b) to be first rebuilt, almost inevitably with an apartment type of housing for more than the existing population. Suburban areas (d) would be revamped with a less extravagant street system. Blighted areas (c) would be attacked last, and, with the reduced population, be devoted mainly to industries and large park areas.

Under the second plan, blighted areas (c) would be rehabilitated as an early step, keeping the present street system, reorganized for safety movement, and providing new efficient dwellings in an average height of not over two and a half stories. Large and frequent open spaces would be provided. The outer area (d) would be revamped with a less extravagant street system. The slum areas (b) would be left to take up final population needs, or if not so required, purchased at drastically reduced land prices and developed as a park belt around the business centre, with cultural facilities, corresponding to the Ringstrasse in cities such as Vienna.

spaces—areas *a* and *d* fully occupied—the scheme would so exhaust and meet the needs of the full population that we would eventually have to evacuate a large part of the blighted area *c*; this would create an unnecessarily large expanse of open land here, thus making permanent the present too great separation between the central business and active outer residential areas.

The advantage of this plan, on the other hand, would be that industry on a large scale might expand and recentre in the *c* area—an industry in which coal smoke is no longer essential would not be objectionable here. It would then be conveniently in reach of both the outer and inner living areas *d* and *b*, and would thus provide for individual choice as between suburbs, with longer transportation, and apartments, with central convenience. We may assume that with the relocation of industry the city could provide amply for the necessary transit facilities at reasonable cost.

II. The second or alternate plan is to begin first with the rehabilitation of the blighted areas, postponing slum clearance until later. The land prices in this larger but less congested intermediate district *c* are at present very much lower and are likely to continue low, because of the vast extent of the areas involved. The present awkward and wasteful buildings not only provide ample open space to restore permanently desirable residential conditions, but also to increase the number of people housed. This, moreover, could be accomplished without resorting to any form of dwelling as intensive as the walk-up apartment. The space is ample and land prices are low enough to permit the use in these districts of small multi-family or row-house types—greatly improved, it is true, over the existing wastefully planned dwellings of similar general intent that constitute our present largest though most backward housing equipment. The second section of this work, entitled "Group Housing," is taken up with suggestions for the appropriate housing forms.

By drawing out the population from the slum area *b*, we could cause a further shrinkage of holding values, making possible later housing in these districts of a more generous and less tenement-house-like character, suitable in fact for both the executives and the workers employed in the central commercial district. In cities where population has become almost stationary, the improvement in areas *c* and *d* might almost entirely fulfill the requirements of both population and industry already spread out through these districts. In this event the needs for additional housing in the *b* district might be relatively reduced and limited to near-in transient apartments, with a few areas deliberately subsidized to provide for the low-income service employees of the central district. The remainder of this space, acquired at relatively low land values, could remain as a generous belt of open space surrounding the central business area—in which the usual public buildings for amusement and cultural purposes would naturally centre. We would thus acquire some of the dignity of those European cities which came into the legacy of such near-in open space through the abandonment of their ancient fortifications.

We cannot here anticipate or follow through all the difficulties to be met in either of the foregoing programs, or suggest further plans for making something out of the present hashed-up mess of our large cities. Nor is this essential to our purpose. But that some such comprehensive and positive procedure is most immediately urgent need hardly be argued. Either our old cities must find the way to make over their present areas into something commensurate with the needs and technical advances of the present-day world, or they will find themselves abandoned for new cities, which will inevitably arise and provide such modern conditions. In either event, we shall have good reason to evolve new and better methods by which to provide housing for the average wage-earner in our cities. This we have failed to do in the past, particularly during the large building program of the post-war period. We now see that the job of doing so is one of the few reasonable ways of putting our large manufacturing and construction facilities to work. It therefore becomes important to develop a concept of the appropriate structures for use in our great blighted areas and our slums.

III. BLIGHT REHABILITATION

THE problem of blight rehabilitation differs in many ways from slum clearance. As a result, we still lack the necessary concepts. We possess a fairly well-fixed concept of how to rebuild a congested area, with structures ranging from "model tenements" to "garden apartments." Yet in the blighted district there is no need for such crowding as inheres in even the most open types of garden apartment. There is room to care for a larger population than the present one, and still to provide ample open spaces.

It is important at this point to speak of the smaller city. Such cities seldom have slum areas in the form of large deteriorated tenement districts. Even such a city's stagnant district immediately bordering the business area is no more congested than the larger outlying blighted areas of our large cities. The same conditions as to relative land costs may prevail in regard to inner and outer areas, but the housing types which are appropriate only to the outer areas in large cities will probably fall within the range of land costs and may be quite appropriate for these slum areas in small cities.

In the blighted area the public-service plant is in relatively better shape than in the slum. The streets are in many cases quite capable of utilization with only minor changes. There is not the problem of wholesale replacement and rearrangement that arises in the congested slum.

What of the existing structures? In the slum there is no doubt whatever that the shacks must be torn down. In the blighted area, on the contrary, at first glance the existing buildings might appear solid enough and well enough preserved to suggest renovation rather than reconstruction. This conclusion does not hold, however, in the face of a thorough analysis of their planning. This planning results in so huge a waste in maintenance and operation that, entirely apart from the desire for greater amenities, their replacement would be the only "good business proposition."

With what then should they be replaced? No one has told us. We must find our own cue. And in looking for it labor might be saved if we began at the blighted area itself, to examine the kinds of dwellings that now occupy its vast dreary wastes. To the investigating mind what we here encounter is extremely curious. For it is in these areas that we find the dwelling types that have actually become the backbone of American housing that is really within the reach of the average American family. Neither the single-family, free-standing house that is the pride of the suburbs, nor the large apartment-house, the pride of the centre, has ever had a chance, economically, to replace these two-family "St. Louis flats," these row houses of Philadelphia and Baltimore, or these single or double "three-deckers" of Chicago or Kansas City. How could such popular types remain so defective in plan? Why should they be so dismally backward in quality as to place the United States at the bottom of planning progress among modern countries? And, greater mystery perhaps than that of how they became so bad, we find ourselves asking what is there in them that enables them, with all their deficiencies and almost suicidal wastes, to survive, and in their weedlike fashion actually to thrive? There must be hidden virtues in this wild breed which wait only for domestication to serve the very purposes they now defeat.

THE DWELLING MOST COMMON IN OUR CITIES

Our attention during the last decade has been centred on the luxury types of dwelling. So completely were we concerned with the individual house and the huge apartment that we came actually to consider these as the bulk of our housing equipment. These types were pleasant, on the whole, to think about. The small house gave an opportunity to architects to have some share in its production: even where the price did not permit the employment of an individual practitioner, there were small-house bureaus and ladies' magazines absorbing and distributing a few plans. The apartment design was the architect's paradise. It could seldom proceed without him, and it often gave him an opportunity to make something of a splurge.

Our concentration on these two kinds of habitation, and our belief that they were central to the problem, were reinforced by a great unnoticed fault in our statistics. *These statistics are almost universally drawn up in terms that were relevant thirty years ago but that have since then lost their import.* At the turn of the century it was a novelty for a family to move into anything but its own private house. There arose the two-family flat. And then, after quantities of such flats had been constructed, once more it seemed epochal that the structure should be enlarged, and not two families but *several* should live under a single roof. Later expansions seemed more natural and took place rapidly, so that psychologically there was less of a break between the three-family flat and an apartment-house with accommodations for a hundred households than there had been at first between a house for one family and a house for two. These attitudes are reflected in our statistics. It is still customary to group all our dwellings into three general categories as does the Committee on Dwelling Types for President Hoover's 1931 housing conference, and to speak of "single-family" houses, "two-family" dwellings, and "multi-family" ones.

Yet if we start today, without preconceptions, on a tour of any large city, we shall find that the above classifications are far from revealing. To speak of both the three-family flat and the hundred-family apartment in a single classification is to take a worm's-eye view, from which a cat and a man are both "large." If we observe by a motor or street-car trip how our cities are actually growing today, we find the types grouped in a different way. For convenience we might provisionally put this difference on a basis of density. We have already described the concentric rings of which the city is composed. In the outer, suburban ring, the population is spread out, and the structures are predominantly free-standing houses. Toward the centre of the circle is the congested district: it is highly concentrated, and composed predominantly of elevator apartments. Working outward again, we find the elevator apartments yielding to walk-ups; while scattered among them, and occupying the huge intermediate areas, are the various kinds of flats, or small multi-family dwellings.

It is time for the housing agencies to begin an accounting that shall differentiate among all the greatly varying types on something like a generic and morphological basis. From no mere desire to vary from the committee, but rather in the dire need of having something specific to discuss, there is here offered another list. Its importance will quickly become evident:

1. Single-family houses:
    a. Detached.
    b. Semi-detached.
    c. Row.
2. Small multi-family dwellings:
    a. Two-story flats:
        Single; double; row.
    b. Three-story flats:
        Single; double.
3. Non-elevator apartments:
    All serviced apartments in walk-ups not arranged in the characteristic old "flat" plan with rooms in tandem, usually in three- or four-story buildings.
    (Two-story apartments are too infrequent to be detached from 2 *a* above.)
4. Elevator apartments and hotels:
    a. Apartments.
    b. Apartment hotels.

A little further on we can examine the evolution of these plans, showing how there arose the relationships that divide them into the several groups or families. But the first and most important result to extract from a reclassification such as we have made is an entirely different statistical view of the types of which our housing is composed.

Our most important discovery is that the vast majority of the population occupies the middle range of structures, under the second heading of Small Multi-family Dwellings, the product of city expansion of the 1895–1915 period. Let us examine how immense this middle range really is.

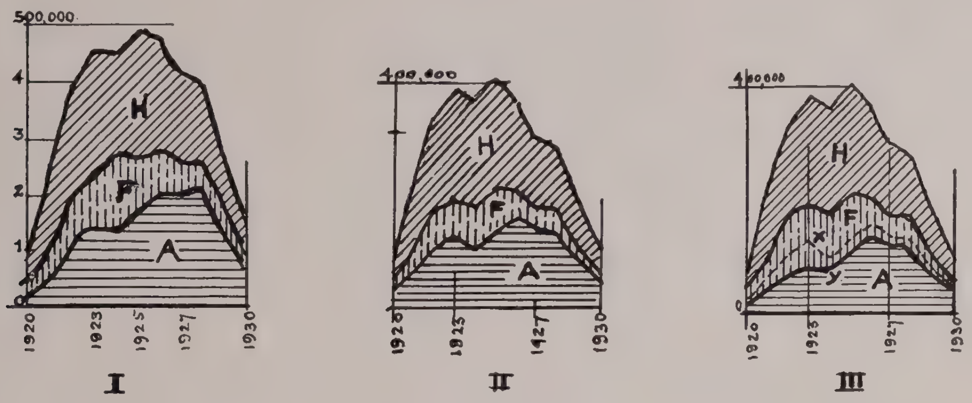
In "Neighborhoods of Small Homes," by Mr. Robert Whitten, published in 1931, we have a tabulation of the total existing housing in seventy-two typical cities of moderate size. This shows that:

47.1 per cent of families live in single-family dwellings;
47.7 per cent live in two-family or small multi-family dwellings (flats), predominantly two-family;
5.2 per cent only live in heated apartments, many of which fail to live up to the standard their name implies.

Now if we add to the 47 per cent who live in small flats the occupants of the three-family and six-family flats of Chicago and Kansas City, and those of the Philadelphia and Baltimore row houses (closely akin to the flat), *we have by far the largest body of city dwellers occupying this vast intermediate group between the single free-standing house at the one end and the real apartment at the other.*

During the last decade, attention was distracted from the persistence of these small multi-family types by a sudden spectacular growth in large serviced apartments. Housing experts thought that they observed a new era; and appearances certainly favored their view. Was it true that dwelling heights, like prosperity, had reached a "new permanently high plateau"? In retrospect we can see that appearances were deceptive. So large is the physical apartment-house, as a mass upon the horizon, as naturally to obscure large numbers of humble neighbors; and the statistical picture was so drawn up as to reinforce the optical illusion. It must be pointed out that during the post-war period 25 per cent of this apartment growth of the country as a whole took place in the one city of New York; and during the years from 1925 to 1929 the share of that city was almost one-half of the national total. Therefore, the inclusion of the New York figures causes a violent distortion in the picture as a whole. Moreover, in most of the statistical calculations, due to the backward-looking kind of classification we have already described, large numbers of structures are counted as apartments that are not really apartments at all, lacking the apartment's essential services and being laid out, in contradistinction to it, on a pattern that is akin to the flat, with one suite to the floor on a narrow, deep plan with rooms tandem.

The general trends in new building were shown in a valuable study by Coleman Wood-

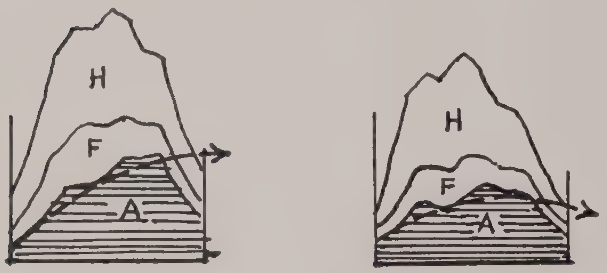


STATISTICAL DIAGRAMS OF HOUSING BUILT IN U. S. CITIES, 1920–1930.—These diagrams are particularly important to an understanding of what was built during the ten years after the war. Diagram I is an accurate graph of the total new dwellings for each year, drawn up according to the Bureau of Labor statistics, for 257 cities listed in the bureau's records. The total is divided into three classes: H, single-family houses; F, two-family (two-story) flats; and A, all other multi-family dwellings, including apartments. This graph makes it appear that, first, flats were a small proportion of the total, as compared to previous years; and, second, that other multi-family dwellings were built with increasing momentum up to 1928 and were holding their own at half the total annual production for 1929 and 1930.

However, this chart includes the five boroughs of New York City, and these not only lagged behind the rest of the country, so that their peak came later, but they also built a disproportionate number of apartments as against other types of dwelling. Up to 1926 they were building one-fourth of all the apartments in the whole country, and by 1929 over one-half. The combined effect of this lag and this bulk is to distort the picture, giving an appearance of momentum to apartment building toward the end of the decade. If, therefore, as in Chart II, New York is left out of the picture, the altered curves represent the corrected totals and distribution for the other cities. It reveals that larger multi-family dwellings (A), instead of increasing steadily from less than 25 per cent of all in 1920 to over 50 per cent in 1928 (the last year of active building outside New York), increased to about 35 per cent in 1923 and to about 40 per cent in 1926, and barely maintained the latter proportion during the succeeding years.

Actually there is another distortion to be corrected. In group A in Diagram II, purporting to be apartments, the statistics were so drawn as to include all three-story flats, running to a large number, and all related not to the apartment but to the flat in the character of their plan and services. In the cities in which flats had previously predominated, there were built (at least from 1921 to 1926) nearly as many three-story flats as two-story ones. Therefore, to have a real picture we must introduce a new division between flats and apartments, at y *instead of the old line (shown at* x*). This is shown in Diagram III. Though there are no complete statistics on the subject, this line* y *is not far from correct. This last diagram shows that even in the last decade the "flat" type of dwelling has remained an important factor, even though in less proportion than in the previous decade when new production was less fancy and more in line with practical usefulness.*

bury in *The Journal of Land and Public Utility Economics* for August and November, 1930, and in subsequent issues. The accompanying diagram is based on a graph in his article and shows the production of new dwellings from 1921 to 1928. He divides them, as do the available statistics, into single-family houses (above), two-family flats (in the centre), and all other flats and apartments (below). This classification must be altered to conform more nearly to the criteria we have just set up, and I have accordingly taken the liberty of adding to the section called "flats" the area below the dotted line "X." This area represents dwellings which, even though they hold more than two families, should be classed as flats rather than apartments, by virtue of their layout and the kind of service they provide.



Diagrams similar to those on preceding page made to express more clearly the trend of apartments and larger multi-family dwellings during the period 1920 to 1930. The graph at the left represents the statistics for 257 cities; the graph at right, the same group with the exception of New York City

It will thus be seen that, even at the height of the movement toward congestion and apartments, the smaller multi-family dwellings made up a fair share of the total constructed, though proportionately not so great as prior to 1920; and if the new ones be added to the great number already standing, both together accounted for the preponderance of our city habitations.

If the apartment seemed to bulk larger than it actually did during the height of the boom, in the depression that hit building after 1927 and 1928 there has been a similar but reversed temporary trend in favor of the small house. This is not to be considered very significant. It parallels the shift in the period of underbuilding immediately following the war. In each of these periods the total amount of building was relatively so small that the net result did not materially affect the long-term upward trend of multi-family types, particularly in cities of 50,000 or more, distributed throughout the eastern and central industrial regions. The small dwelling offers an individual outlet or small-scale investment at a time when disturbed conditions make the larger sources of capital hesitant.

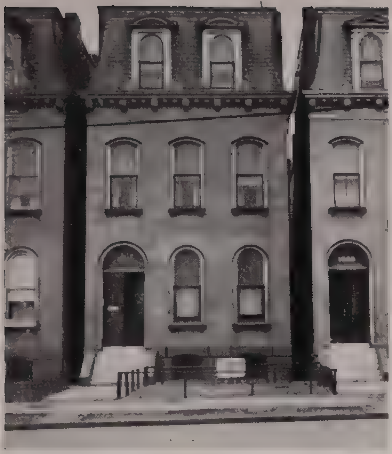
Summarizing, we are now in possession of a corrected statistical picture: the large apartment dwindles as it is removed from its favored position directly in front of the eye; the single-family free-standing house also recedes in importance; the great main area of the city is found to be built up in an intermediate type: small multi-family dwellings, ranging from the two-family "flat" to the double "three-decker"—also a flat, as its pattern clearly shows.

What are these small multi-family dwellings like, and how did they come to be?

THE EVOLUTION OF THE FLAT

To answer the second part of the question first, the reader is referred to ARCHITECTURE for March, 1933, "The Sad Story of American Housing." There we traced the evolution of housing types in St. Louis from 1890 to 1930. This process is typical of other cities. The types gradually evolved from the old-fashioned town house of Philadelphia through the various stages of narrowly separated, free-standing single-family houses down to two-family, double two-family, then three-family and double three-family flats. Throughout the whole evolution, meeting the changing economic demands so far as the amateurish abilities of the builders could meet them, the plan never really advanced. The process was hog-tied to the concept of the narrow lot. Throughout, the buildings remained long and attenuated; and the narrow side yard persisted as a haven for alley cats while the front of the building blossomed out with porches and decorative "motives" to make up in window dressing what the structure lacked in natural adequacy.

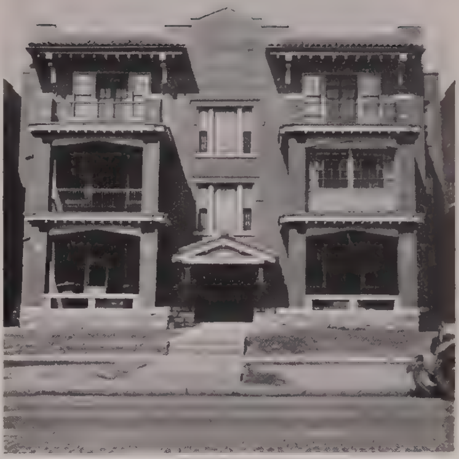
Meanwhile, although the realty effort nowhere abandoned its basic method of subdivision, in many smaller cities the effort was carried through successfully to make the standard lot wider. Forthwith an unguided public demand for the still more wasteful "bungalow" of one story filled and overcrowded the lot even in its new generous proportions. By 1930 the builder himself began to realize that these bungalows, jammed against each other, looked somewhat awkward. A movement then got under way to camouflage the bungalow as a modest

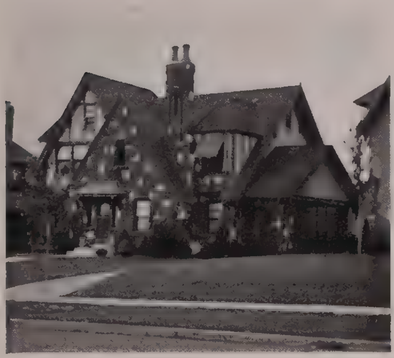


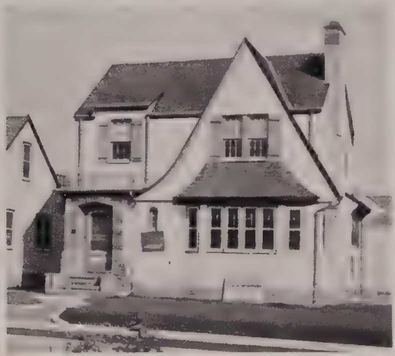
At left, a dwelling of 1880 in St. Louis. Our "rugged individualism" separated the houses by two feet—wide enough for the alley cat, but not sufficient for light and ventilation

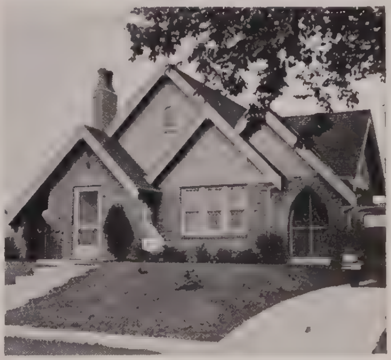
At right, St. Louis, 1915 to 1925, the double three-story flat still retained these narrow side yards, by adding porches

Below are three typical efforts at self-expression on the part of the untrained builder: left, from Kansas City; centre, from Minneapolis; and on the right, "the house of a thousand gadgets," Kansas City

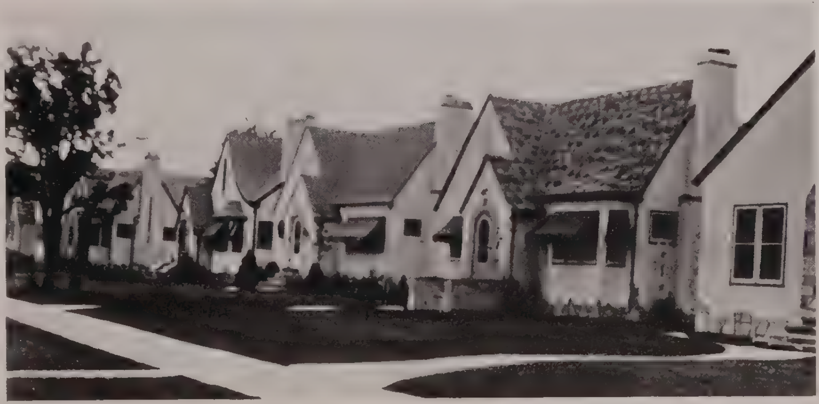


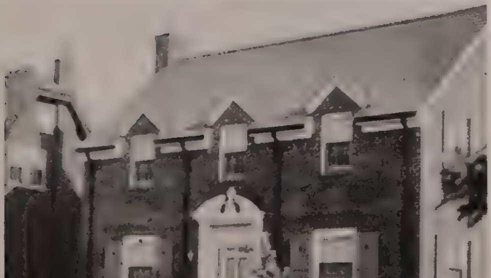




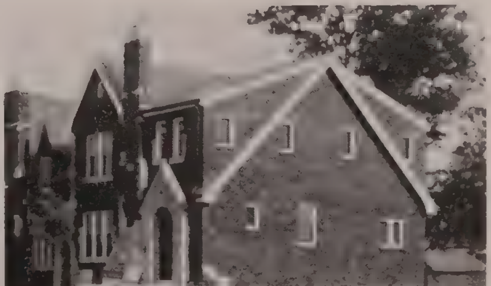


At right, the Minneapolis bungalow of 1930. The narrow lot has been somewhat widened, but the unguided popular demand of the time for the one-story dwelling filled up this additional width. Here it is camouflaged to simulate a row of detached cottages





At the left, house built in a St. Louis subdivision to set a standard of good taste in design; and right, failure of builder to live up to the standard



cottage. A high-pitch "cross-gable" was turned across the front of the house, giving it the appearance of running parallel to the street. The main roof being kept at a lower pitch, the fact was hidden from sight that the bulk of the house was arranged precisely as before. This ingenuity was cleverly manipulated in many Minneapolis examples but botched in other cities. The ubiquitous front chimney, badly placed for living with but easy to advertise, was also characteristic of this period.

A more recent and even cruder example of this process took place over a much shorter period of time in Detroit and Buffalo, within the last few years. This is described under "The Blighting Effect of the Narrow Lot," on page 23.

Need we introduce further evidence of the innate stagnation of the entire procedure? Seeing the realtor-builder at work over a long period, we find that his operations have never transcended the most simple-minded of basic concepts. He is first, last, and always a merchant of commercially negotiable building lots of a familiar and never-changing type. Selling these lots, financing them by means of mortgages, and filling them with construction "on the side"—these are his functions as he sees them and faithfully pursues them. It follows quite naturally that any considerations of orienting the house to sunlight or arranging internal plan economies cannot even be dreamt of. The houses do not so much as meet the ordinary requirements of decently economical construction; and the heat they lose amounts to throwing half the coal right out of the window.

Yet apart from what it shows us about the origin of the miserable arrangement of our city dwellings of the vast middle range, there is special interest in this evolution of housing forms. We find that the single-family house is never more than a passing phase. The tendency is always toward multiple dwellings. When a period of depression temporarily resuscitates the smaller form, this condition does not last, but quickly yields to the recurrence of the two-family flat and then something larger. If, with all its unbelievable defects and brutalities, the flat cannot only survive but flourish, it must be a hardy breed! The reason is that the small multi-family dwelling, despite its defects, still retains an incontrovertible advantage. Among all the forms produced in the regular processes of building, this one offers the public the most in the way of convenience—at a not impossible cost.

GETTING DOWN TO THE AVERAGE PURSE

The one thing that was never thought of during the riotous decade from 1920 to 1930 was getting down to the average purse. Observing the spectacular success of the first apartments, builders behaved as if the field for them were unlimited. If the first apartment paid, so must the next one just a block down the street. Land values obligingly rose; as did assessments. It became necessary to collect high rents in order to make a profit on the investment. No one attempted to find out where the people were to come from with incomes that should justify such expenditures on rent. It was fashionable to deduce building heights and coverage from the "value" of the land.

It is not surprising that under methods of this sort the new accommodations were all massed within a restricted price range. Whether they were apartments or suburban homes, it was the luxury market that they met. For people below the top third in range of income no desirable new housing was produced. But we are not at the moment concerned with the new production as a whole. We must make the attempt to discriminate among the various kinds.

The greatest handicaps in cost lay at the two extremes of expansion and congestion. Roughly speaking, the old-fashioned free-standing house suffered excessive costs because of over-expansion; the apartment suffered them because of over-concentration. From another standpoint, the small house suffered because the processes involved were intermittent and scattered. Small numbers of dwellings were erected by shoestring builders on incompletely prepared land; inexperienced consumers who bought the houses only gradually came to realize what a white elephant they had undertaken to support. The apartment suffered from the opposite kind of ailment: it involved too heavy a central administration and maintenance, too intricate an organization with correspondingly heavy risks and rapid obsolescence.

COSTS OF THE SMALL HOUSE

Let us go more into detail about the small American "dream cottage." By nature it can exist only so long as the city itself expands. The heavy requirements of the small house in terms of land put it entirely out of the question for central city areas, for even if these were to be fully built up with such houses, the distances to and from the business districts would be prohibitive. Indeed, the distance is making small houses highly inconvenient even at the rim. Since business districts have not been decentralized concordantly with residential ones, the white-collar suburbanite finds that, along with his free-standing house, he has acquired a disagreeable ride on the 8:17 and the 5:12 that daily rob him of two daylight hours. Yet although the small house calls for new outlying areas, its wastefulness of land and public services put it out of reach of the average family even there. On any large scale it can subsist only on low quality, or on so incomplete an initial set of public services that the buyer is only deceived, and later required to meet a more costly installation.

The fantasy of the snug and cozy little home that the typical American will own, building it for himself, to his own plans, on his own lot, is indeed one of the most highly paid fairy tales the advertising man ever managed to float. To find a very different reality we need not even go back to the bulk of the single-family houses the people actually inhabit, our country's "largest mass of obsolete and discredited equipment." There are observations startling enough to be made from the current crop, built within the last four or five years. These "modern" houses were the object of special attention when, in 1931, I had the opportunity of visiting twenty-two representative cities for the President's housing conference, to see what kinds of dwellings were being built, by whom, of what merit and at what cost. The notes that follow are therefore based on first-hand observation.

1. It is of the highest importance that in the huge preponderance of cases the individual owner did not in any manner build his own house. The picture-books show him purchasing a lot, selecting an architect or at least a stock plan from a magazine, and employing a builder. Direct observation on the street showed beyond contradiction that from 75 to 90 per cent of the houses currently produced in the twenty-two cities were in the hands not of owners but of speculative builders, putting up anywhere from half a dozen to 150 houses at a time for sale in the open market. Not only "small houses" but pretentious affairs in the price range from $20,000 to $40,000 were being constructed by the commercial builder for unknown purchasers. Clearly the buyer is at the mercy of the general builder's intelligence and honesty. Some inference may be drawn as to the waste motion involved on the part of those home-seekers' magazines and other agencies of guidance, which direct their whole energy into educating the prospective home-builder to materialize the home of his dreams from his own plans on his own lot.

2. The utilization of land was characteristically defective. Narrow, deep lots prevailed, with a resultant trend toward long, narrow plan-types running back from the street. Not even such broad-front plans as were shown in the plan-books could be used, because their standard, such as it was, remained beyond the subdivider of the land, whose method had precluded them. Open spaces were dissipated into dark side yards, generally lined with concrete, which served both as driveway and sounding-board to the car on its way to a garage (if there was one) placed at the back of the lot, taxing the little sheltered space remaining there. The neighbors' windows were located like choice seats in a theatre, as if the purpose had been to make a neighborhood drama out of private family life. Concentrated open space for pleasant outlook or recreation there was none; the possibility of it had not been thought of.

3. A single type of dwelling would be standardized in a given locality, or sometimes throughout a whole city, shutting out the diversity needed to meet the normal range of family needs. Copying of house types from one city to another was also noted, largely without reference to local climate, topography, or traditions.

4. Guided by emulation and fear of competitors, rather than by even the feeble tastes or basic needs of families to be housed, builders were engaged in a mad scramble to provide the greatest possible number of gadgets. Colored tile bathrooms—sometimes with sunken tubs—pseudo air conditioners, imitation fireplaces, all were being freely offered in place of convenient and livable planning or desirable environment.

5. It follows that the houses were in dubious taste. The literature alone would reveal it. The builders, however, are innocent. They have been listening to architects. They feel that they are spreading an era of style appreciation heretofore unprecedented. Their houses are English, Spanish, Colonial, or otherwise "artistic."

Moreover, single-family houses, generally speaking, are bound up with a wasteful procedure, involving premature land speculation and high financing costs, promotion and advertising expenses. These, added to the delayed and increased public-service costs, constitute a burden that must be thrown overboard for any permanently satisfactory solution. The small house is meanwhile not amenable to more advanced technological and construction methods, which involve such elements as machine excavation, continuous outside walls, efficient spans, and a hundred economies arising from straight-line production.

Nor will it be saved by prefabrication of standard types indiscriminately broadcast throughout the country. This move will only augment the present chaos, in which incidental and overhead expenses are much greater than the total cost of actual labor and materials that go into the final selling price of such houses.

From the standpoint of consumers, the small house depends on the family as a stable and responsible entity, deriving from the time when the home was really a homestead; whereas families are now constantly being broken down into smaller units. And these divide and shift still more as jobs become more standardized and mobile. The groceryman now works for a chain store, and may be transferred; the former small manufacturer has charge of an office today in Denver, tomorrow in Detroit; it is not only the factory worker who has become nomadic. This condition of course affects home ownership rather than the house itself; but the small house is the one that particularly invites ownership.

Such, briefly summarized, has been the career of the free-standing single-family house in the hands of those who love it best. The subdivider and speculative builder, by resisting every attempt at improvement in concept and execution, are helping kick their darling out of the door. Even were the type intrinsically the soundest, it would still have difficulty surviving its devotees. Unfortunately the type *as such* is subject to the most formidable handicaps, so that, like a battleship too slow to keep up with the fleet, it can depend for survival at best only on the most skilful handling.

HIGH COST OF THE APARTMENT

The apartment is a solution for more expensive dwelling space based on problems of high land cost. These land costs, even in widely decentralized cities, are an inevitable accompaniment of our haphazard city expansion. So few are the really livable parts of our cities, that all who can afford the luxury of ordinary comfort and convenience crowd into a few small districts, forcing land costs high, even though the area represented constitutes a very small part of the entire city. And, land costs aside, the construction and service costs of the apartment would still place it beyond reach of the average family income.

In all discussion of comparative costs, there are three fundamentals to be balanced. Wrapped up in the sales price or rent are the cost of land, the cost of construction, and the cost of maintenance and depreciation. The apartment house makes its savings by multiplying the floor area on a restricted piece of land. Yet, on land valued up to $2.50 per square foot, the added complexities of construction and service more than offset the savings from intensive land utilization. These costs include the distinctly heavier walls and firmer foundations required by a building that rises above two or three stories; the hoisting and double handling of materials for the upper stories; the provision of fire-escapes, fireproof stairs and stair wells; and the complexity in providing access to the roof (additional stairs, penthouse or stair bulkhead at the roof, parapet for safety, laundry-drying equipment, and finish of roof to permit walking). In respect to service, the apartment house requires the capital cost of elevators in buildings above four or five stories, together with the capital cost of the space the elevators occupy; a central heating plant, general laundries if provided, and other institutional provisions. It requires the maintenance of these features, including the lighting, cleaning, and repairing of public halls, the upkeep of courts and gardens, and other miscellaneous expenses. In general, the technical facts and actual working experience are still too meagre as a basis of definite conclusions. Yet the implications of all the most careful and well-supported analyses are that those forms of apartments which exceed the limit of a normal, walk-up, non-elevator standard, suffer distinctly if any desirable standards are to be observed as to sunlight exposure, cross ventilation, and general amenity. To say this is not simply to voice a vague suspicion. Later in this work are presented the carefully digested, comparative costs of apartment and non-apartment buildings based on the known figures of actual cases.

Parenthetically, the popularity of elevator apartments has grown partly from an unfortunate circumstance. In New York City, a code leniency remains as a hangover from the times of the six-story walk-up tenement of the nineties. This concession permits non-fireproofing of six-story buildings in general, and is absolutely indefensible. Moreover, the tenants have been encouraged to feel that the elevator raises them not only to the upper floors but to the upper social strata. The resident of the second floor, though he seldom uses the elevator and is often annoyed by its noisy operation, contributes at least an extra dollar per room per month for this privilege. Such attitudes are irrational but need not, just for that reason, be permanent. Snob psychology can be made to work both ways, and even on the principle of "conspicuous waste," a community of amply spaced two- or three-story buildings in the middle of a city of congested apartments might be made the "ritziest" thing.

But let us suppose that the elevator apartment could be forced within the range of the average family. Would even such a change measurably retard the spread of blighted districts? Would it replace the miles of worn-out or obsolescent dwellings of our large cities? LeCorbusier once proposed the ideal of replacing vast areas of low housing units by isolated towers accommodating an equal population, yet such an ideal is very far removed from possibility in this country. It would require revolutionary adjustments in our entire concept of landholding, land utilization, and community planning. These tall towers would moreover embody to the highest degree the complexities of maintenance and service we have mentioned, if not of construction; and this alone would place them beyond the reach of the mass of our population. Meanwhile, if such apartments were not widely spaced in large parks, they would rehouse the present population of our cities in a mere fraction of the present area occupied, leaving the intermediate spaces blighted, unsightly, and unprofitable, just as they are today.

THE TECHNICIANS NOD

Returning to the flat, we might as well disclaim at the outset the intention of perpetuating it in its present form. Not the flat as we see it all around us, but the flat as the technician might long ago have reincarnated it, is what concerns us. The technician has been asleep at the switch. His whole attention has been concentrated on the luxury dwelling. Whether it was a huge apartment building, or whether it was a residence on Long Island Sound, the structure that received his attention had no meaning for the majority of the population. The halting and ineffective job that has meanwhile been done by the speculative builder through a purely commercial instinct has actually been our best. At last the unguided interests have run their course, and inherent wastes and lack of imagination have brought an unbridgeable discrepancy between the cost of the product and the means at the command of the possible occupant.

THE BLIGHTING EFFECT OF THE NARROW LOT

No house can be wider than its lot. If the technician is to make a start toward improving the dwelling, he must begin by widening it; for most of the inefficiencies and stupidities of the present forms derive from their narrow, tandem arrangement. Yet the lot must be widened before the house can be.

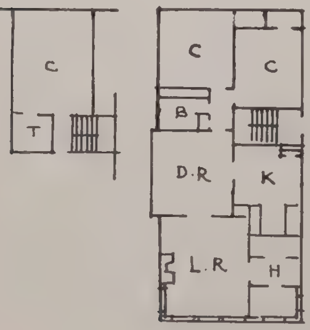
The narrow lot arises from marketing habits that have nothing to do with the final purpose of the purchaser in terms of building. A narrow front *is* important to the land subdivider, because he sells his lots as if they were a finished marketable product, by the front foot; and this places the broad lot at a disadvantage. This obtains despite the fact that the cost of street frontage even at its worst exaggeration is relatively unimportant in the final cost of the completed building, in which the lot is only one subordinate element. Better community planning of streets, providing in advance for heavy and also for light traffic, would cut frontage costs still more.

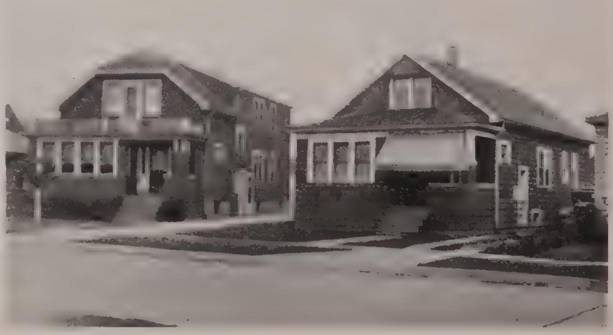
A second factor in the narrow lot is that practically all new subdivision is in terms of single-family houses, although a large part of this land is ultimately used for multi-family dwellings. There is only one instance known to me where a new subdivision of any size was laid out deliberately for sale to builders or investors as lots suitable for multi-family buildings. This was one in St. Louis that I myself designed soon after the War. It was highly successful as a marketing project; but unfortunately the owners attempted to straddle and did not enforce the restrictions on use that were recommended to accompany the plan. As a result, broad-front shallow lots were bought by unimaginative builders who forthwith made a mess trying to fit their old, wasteful, narrow-front plans on lots quite superior to their purpose (see page 19).

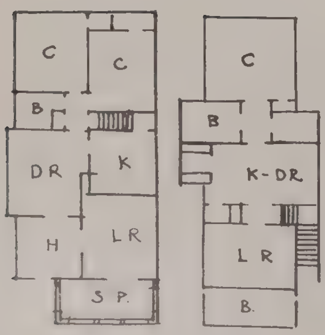
Multi-family dwellings have remained awkward and wasteful because they were the product of unimaginative builders with no concept of good and bad planning principles. They calmly adopted ill-shaped lots as a necessary evil. They argue that since people have always accepted the miserably arranged flats provided for them, and have appeared to live happily there, the flats must be quite all right. Then, as we have shown, these flats are developed unthinkingly from smaller types such as single-family houses, or lately even from bungalows. This process we have already sketched as it took place over a period of thirty years in St. Louis. Stretched over so long a period, an account of the process would have to take into consideration numerous obscure causes. Yet if we come closer to the present day, we can find a similar evolution running the same course before our eyes in one of our medium-sized cities, the city of Buffalo. In this city, the building of better-class homes fell off in 1926–1927, long before there was any thought of the great depression. Builders who had previously been active in outlying land subdivision found this market closed and returned to a previously exploited but still unbuilt area nearer in. Tracts that had fallen in price, due to their own previous suburban competition, these builders now developed with small houses built for sale. Naturally they followed the popular mind, educated by magazine pictures of the Sunny South, and adopted the one-story bungalow type. To fit the narrow lots these bungalows were necessarily stretched out into a narrow and wasteful plan. Only by the poorest construction I have ever seen in the North—the plaster held up the paper, but perhaps the paper also held up the plaster—could the handicaps of the plan be overcome. Yet by adopting a brick "sun porch" as an alluring front approach, the builders were able for a time to market their product.

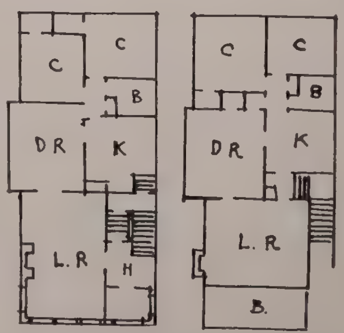
But the bungalow, particularly in its crude narrow-lot form, happens to entail waste and expense which sooner or later register themselves as "sales resistance," something which, we regret, has never been countermanded by any Eighteenth Amendment. So the resourceful mind of the speculative builder invents the "investment bungalow," with an annex on the rear attic for a subtenant who pays part of the rent. Some sacrifice is appropriately required of the owning family on the first floor. The extra stairway needed for the new upper tenant crowds the living-room of the main unit forward into the erstwhile sun porch.

The next step for the practical mind is naturally to provide more space above for more rent, and the upper dwelling is consequently expanded into almost a full replica of that below. Almost, because the new two-family structure must still masquerade as a modest bungalow—for who wishes to admit his dependence on his neighbor (above) for the lion's share of his monthly costs? Very ingeniously the public is coddled into receiving this almost final step in the undoing of its bungalow ideal—very in-

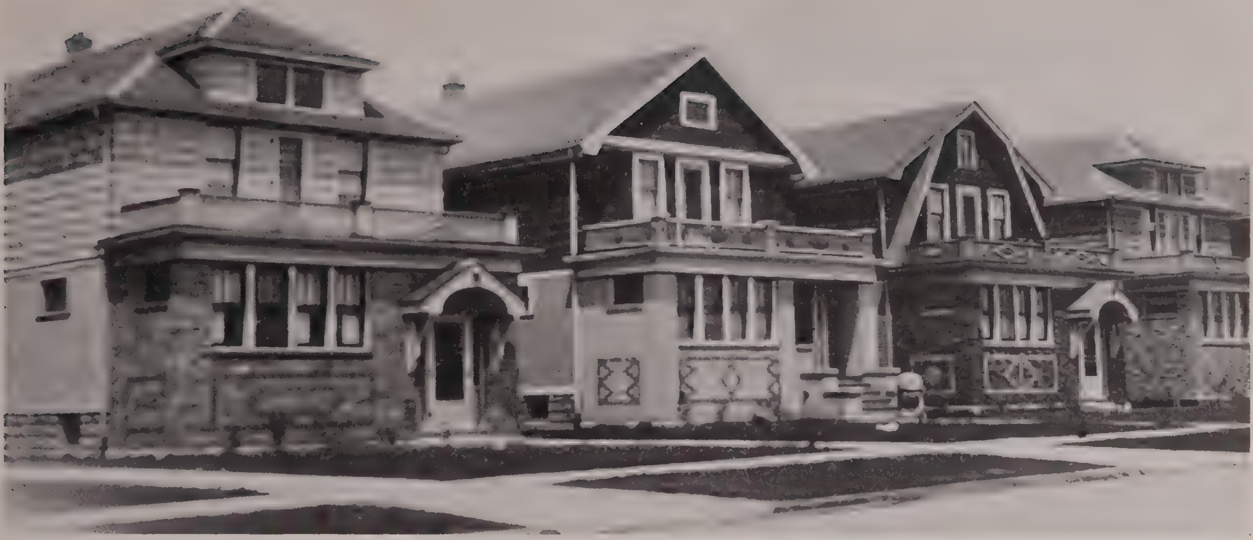








Here, at the right are the first and third stages in the "rebirth of the flat." The building at the right is a bungalow for one family only, and has a sun porch adapted from more expensive houses. The house at the left is the third stage of the full two-family "bungalow flat." Plans at the upper left show the first stage; one rental room on the second floor. In the lower left corner is the plan of the one-family bungalow shown in the photograph. Beside this is shown the second stage of bungalow expansion, requiring a change in the stairs, and permitting a fairly large suite above. At the right are the plans of the bungalow flat which has blossomed out into almost a full two-story flat, with nearly equal space above and below. Sometimes there are rear stairs also. Here in the final stage are still the rudiments of the original bungalow, with the appliqued sun porch of brick, long ago absorbed into the front part of the living-room



Here is the row of "bungalow flats" that have blossomed out into what is almost a full two-story flat. It will be noticed that with the absorption of the former sun porch into the living-room, part of the living-room wall is of frame and part of brick, with one little window flanking a fake fireplace in frame wall, the other in the brick

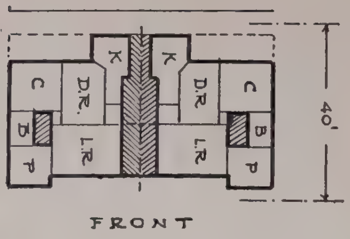
geniously deceptive in front, but brutally frank behind. (See page 27.)

Finally the top story pushes itself out into a full replica of the story below—but still not quite. The effect must still be guarded by the "draping" of a false gambrel roof, which doesn't really fool any one, but makes a highly valued variation for each alternate unit in an endless row of equally dreary façades. But, prize of all! throughout this whole process the hardy resistance of the speculative builder's mind has preserved its integrity. Look down the line of these full-fledged two-flat dwellings of 1931. The "sun porch" appendage is still maintained in its distinguishing brick appliqué as the front half of the living-room, tied into the frame half of this room by the fake brick fireplace, at each side of which is the proverbial small window over the proverbial bookshelves; the get-up distinctly advertising the interior dishonesty by the fact that one window is in frame and the other in brick.

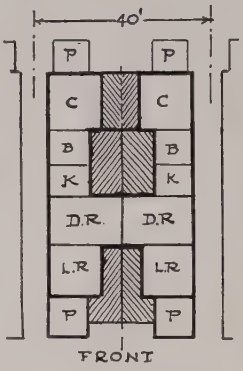
Here we see demonstrated the emasculation of the whole range of dwelling construction by amateurs, unblessed by the capacity of even a second-rate draftsman to develop something that might meet the exigencies of a falling market. And still they were able to borrow a good share of the cost of these wretched buildings from those great institutions to whom we have been induced to entrust our savings and insurance money!

Now, as already said, even a second-rate draftsman could in short order produce a better plan within less actual space. The blighting effect of the narrow lot has not only damaged our cities but has dulled the minds of those astute builders of ready-built houses and flats until they are impotent to make the least use of technical competence even for their own selfish ends. They merely back and fill in the welter of back-numbered ideas which can no longer meet the economic necessities. Otherwise some of them, operating on a row of houses or flats where an entire street frontage was at their command, would have been able to apply a little crude mathematics. By this means they could easily have discovered that a plan with rooms of identical size and shape could be put into a building of a slightly different shape with a saving of from 12 to 15 per cent in the case of a brick flat with twelve-inch walls, and an equal saving in perimeter. Not only would the building appear considerably more valuable and be better arranged, but at a saving of only 20 cents per cubic foot for the area saved, it would permit the use of the necessary additional frontage at $75 per front foot. This ignores the possibility (beyond the mental capacity of our "astute" builder) of rearranging his land so as to reduce the depth of his lot by one-third, which would amount to at least 1600 sq. ft. of land at, say, a base price of 20 cents a square foot; this would just neatly balance the $825 added for the eleven feet of frontage, leaving the building saving pure "velvet."

A four-family flat with complete apartment service, built by the author in St. Louis primarily to demonstrate to local builders the economies and improvements possible in broad-front planning. Contrasting with this is the narrow-front plan of a four-family flat as developed by a nearby speculative builder. The upper plan has a fully equivalent and much superior arrangement of living space, included within 85 per cent of the area of the other. A single steam-heating unit in the broad-front scheme used 63 per cent as much fuel of the same grade per season as the four separate hot-air heaters in the narrow-front building



In the two plans shown, the corridor and stair areas are cross-hatched



A demonstration of this principle was made in two broad-front two-story apartments which I built in 1920 to show to St. Louis flat builders the wastefulness of their usual type of plan. This had invaded a subdivision for which I had made the plans just prior to the War period. While it had no immediate effect on the local builders, it was copied by apartment builders in a higher-grade district and in fact became the customary plan for the three-story double-flat type of apartment built over a large area in succeeding years.

The awkward arrangement of the flat for housekeeping purposes has previously been mentioned. Its rectangular form is entirely inelastic in its capacity for bedroom space.

Even though the most usual plan shown herewith is some 65 feet from "stem to stern," it provides only two reasonably usable sleeping spaces, one at the extreme rear, the other in the front sun-porch appendage farthest removed from the bathroom. It is this type of plan that predominates in great areas of St. Louis and Chicago and which has resulted in the necessary "popularity" of the disappearing "closet bed." This *ingenious* device had to be invented in order to preserve the total *lack of ingenuity* on the part of builders who persisted in such stupid plans.

Furthermore, the form of these flats precludes the entrance of any sunshine to any first-story rooms and to most of the rooms on the second story. Even where the street system is almost ideally carried north and south, these plans succeed in defeating the good orientation that would be possible in broad-front, two-room-deep row dwellings or flats on the very same streets.

SUMMARIZING THE FAULTS OF THE FLAT

We have emphasized that none of our multi-family dwellings have quite outgrown their origin on the single-family lot. They filtered into cities already platted in single, narrow, and deep city lots, and their design has never ceased to be hampered by this Chinese shoe. The fact is that such buildings, at least in the case of the flats, are now usually produced by the dozen at one time and place by a common builder; but this would never be inferred from their accidental positions on the city map. Good judgment in the most rudimentary form would suggest the desirability of planning the whole enterprise as a single, related project. Unfortunately, inertia is reinforced by piecemeal methods of financing. The operator is obliged by the lending company to keep his property in the form of loose change —small units that can be sold to small investors to take advantage of mortgage money made available by small and none too secure lenders in small units. Even this restriction would not, however, prevent radical improvements in the form of larger individual buildings, if the habit of narrow-lot plotting could be overcome.

What, then, are the specific defects of these buildings, planned to fit into a typical city lot?

A. They arrange living space in a deep, narrow, oblong form, one suite to the floor, running from front to back, either singly or on each side of a double building with party wall.

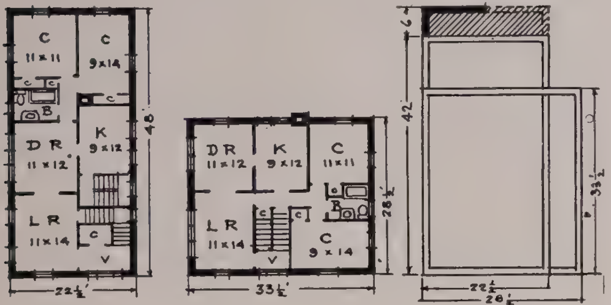
B. Rooms, however many in number, must be arranged tandem. Either the relationship is a simple 1-2-3, with all circulation passing through one room on the way to the next, as in many Southern flats, or there is a long hallway, usually against the interior wall, and consequently dark.

C. Such an arrangement is particularly inconvenient and wasteful from the standpoint of housekeeping. Moreover, it provides a maximum of space that is dark, noisy, and lacking in privacy, since the outside openings are only on narrow courts, frequently six feet wide by sixty feet long, as in St. Louis examples, or entirely closed at one end, as in Chicago.

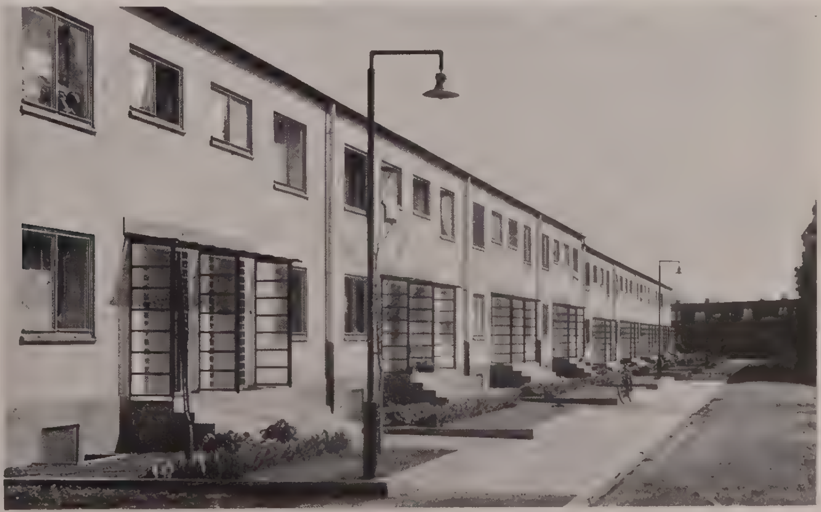
D. Deep, rectangular dwelling space, particularly in double party-wall flats, is most wasteful of building materials, masonry walls being a dominant factor.

E. Such buildings are excessively wasteful in maintenance, particularly with regard to fuel consumption, since they expose a maximum periphery to the weather. Studies on this subject are borne out by my personal experience in owning small multi-family buildings of improved design. Both the studies and the experience indicate conclusively that squaring up the design of these buildings to conserve floor space and cubage, by means of efficient and compact hallways and reduction of other non-living space, makes possible savings of about one-third in heating costs.

F. Such buildings are universally produced with no thought for community atmosphere or community amenities. There is neither the



Above, at left, approximate plan of the speculative builder's efforts pictured in the row at left. Centre plan a broad-front rearrangement with rooms of identical size and shape. Right-hand diagram shows savings: cross-hatched, area saved; black, outside wall saved. The narrow-front variety is shown front and rear in photograph at left. While in 1927–31 Buffalo built 5,000 such wasteful dwellings, Frankfort, Germany built 10,000 solid, broad-front houses such as shown below



pleasant view that derives from planned grouping, nor provision for normal group activities of the tenants, such as sports. The physical buildings comprise the entire interest of the producers, and so there is no trace of a reason why such communities, or rather non-communities, should resist the ravages of deterioration, becoming within a few years as truly slum areas as their predecessors.

That a form of planning so unimaginative and uneconomical might occasionally occur as the product of meagrely trained builders who construct without benefit of professional planning services, would not be a matter of great surprise. That so unimaginative and uneconomical a form of planning should not only spread in our cities but now frequently be copied in small towns, where no scarcity of land can be claimed as an extenuating circumstance, is hard to credit. Zoning has made valiant efforts to segregate this undesirable type of dwelling, but has done little to improve its form.

RENOVATION OR RECONSTRUCTION?

It is just such flats as those above described that occupy vast parts of our cities and make up no small part of their blighted and stagnant areas. In many cases the neighborhoods are still fairly well kept and the buildings are by no means dilapidated. It is usual to consider that their faults concern their obsolete bathroom and kitchen equipment; and there has recently been no little agitation for their renovation on a large scale. But to admit that renovation is more feasible than reconstruction would be to accept, for the most part, the permanency of the vastly deficient and undesirable qualities of most of the housing space representative of these sections. Particularly where they consist of "flats" of the pre-War era, even though they are substantial and often in fair repair, they enclose dwelling space which is ridiculously wasteful, badly arranged, and providing no opportunity for recreation, enjoyment, or leisure in any form. It so happens that in this extreme wastefulness of practically all the 1905–1915 product of the speculative builder, there lie the seeds of its undoing and replacement. These buildings are becoming so wasteful in maintenance that we cannot long afford the constant losses which they entail; we can better afford the drastic one-time job of replacement rather than the wasteful piecemeal job of renovation. If this is true, and the case is strongly in its favor, then the stage might be set for rehabilitation on a large scale. Let us see whether such a case can be made and maintained.

There are numberless owners whose buildings once enjoyed a fair degree of occupancy just because there was little or nothing else available at anything like the same rent. The general overbuilding of the last few years, together with a shift in populations, has exposed the real condition of these buildings: they are inescapably obsolescent. Their owners are faced with the need of doing something. Quite frequently, the ownership has already passed to the mortgage holder or banker. An architect in whom this banker happens to have confidence may at this point be entrusted with questions of alteration or modernization. Generally speaking, all that is sought is the shortest way out of a bad bargain, and the assumption is that expenditure should be held down. The result comes to a set of minor alterations which in no way really modernize anything at all.

The architect should have a clearer insight and guard against such makeshift. His ability to cope with the problem requires, first of all, that he be familiar with all the factors that go to make up rent. With such knowledge firmly in mind, he may, in fact, often decide, and amply demonstrate, that remodelling will be ineffective and that complete replacement is the real need. He can usually take for granted that the old building was not particularly well planned to begin with, and when altered will at best be removed one step further from, rather than nearer to, efficiency or adaptability in relation to its new up-to-date use. Maintenance and depreciation are likely to be so great in the altered dwelling as to more than offset the increased capital costs that would be required to wreck the present buildings altogether and replace them with something really up to date.

Were the architect dealing with the former individual owner, such complete replacement might be out of the question. But large mortgage-holding institutions should be amenable to the argument that it is wiser to supply the additional capital for reconstruction, if such a course will secure a definite improvement both in current returns and in the soundness of the investment. Although the banker may not want to let one new building expose the faults of the many older ones in the neighborhood, so shortsighted an attitude is not likely to prevail if the claims for replacement are on a solid basis.

It may be of value to suggest the elements to be considered to arrive at a solution rather than a temporary makeshift alteration. As frequently happens, the determining factors are not easily discovered and may be tucked away in certain obscure items which do not bear out the customary assumptions to which commercial agencies frequently limit their outlook. Obviously, maintenance costs are in these cases as important as the original costs of building, and since they are seldom fully known or taken into account, the validity of rehabilitation schemes is frequently placed in doubt. Even the unchecked judgment of very "experienced" operators is not always dependable in such cases. Some slight insight into a few of the contingent factors of rehabilitation may be gathered from the following case of practical analyses for a problem of some magnitude:

The owners of a new, efficiently planned, five-story walk-up apartment that covered a large part of their property were also in possession of another group of older apartments of a three-story flat type. The latter were well tenanted, and were of rather better than average quality and preservation. Fortunately, the old and new apartments were separately incorporated, with separate bookkeeping, although they were held by the same interests, managed by the same staff, and, incidentally, connected to the same heating plant. Hence, all the materials were available for a comparative study of costs.

After eighteen months' operation, the return on the old buildings was so low compared to that on the newer ones, that the question came up whether they had better not be removed and replaced by an extension of the new project.

Calculations based on construction, land cost, and depreciation, gave a negative or inconclusive answer. The construction costs of the proposed new building, it was estimated, would parallel those of one of the modern units already built. But the land would cost much more, since the book value of the old buildings had to be added to the underlying land cost at vacant land values, subjecting the proposed new structure to a 125 per cent increase in land cost as compared with the similar unit in the existing modern structure.

The problem may be stated in simple terms as one of balancing increased capital costs against decreased depreciation and maintenance. Maintenance was at the outset limited to cautious assumptions based upon "average" experience. Current maintenance charges were figured against both the old buildings and the existing new ones at approximately the same amount per rentable room. The only excess cost assumed for the older buildings was for more frequent renovations required by their more depleted conditions. The advantage of rebuilding on the basis of these assumptions was found to be too slight and uncertain to warrant the added investment.

It was at this point that the suggestion was made that the assumptions be checked by a more careful effort to determine the *actual* cost of heating, janitoring, and other maintenance operations, in the old buildings as compared to the new. Due to the separate bookkeeping the comparison could readily be made. For instance, the heat used by the old buildings during the previous year had been metered and was found to run about 60 per cent higher per rental room than in the existing new buildings. This was due, no doubt, to the fact that the old buildings were wastefully laid out as flats with a great deal of outside wall exposure. Also, their height being only three stories as against five stories for the new buildings, they exposed proportionately more roof and basement to the weather. Similar disadvantages were found in janitoring the old houses, with their proportionately larger number of stairs, and in decorating their wasteful halls. Corrections for these discrepancies resulted in a new set-up showing a decidedly increased income from rebuilding instead of remodelling.

Thus we find that the processes of maintenance and building planning, which previously have been divorced from one another, have resulted in a widespread misconception of, or at least failure to fully weigh, wasted maintenance costs of remodelled dwellings against the increased capital costs for rebuilding. The complete facts may frequently demonstrate that remodelling which accomplishes very little toward the larger problem of really salvaging blighted districts is in actual effect, on resulting combined capital and maintenance charges, so nearly equal to the costs of wrecking and rebuilding new efficient dwellings as to throw the weight of good business judgment on the side of rebuilding. There can be no question of choice from the point of view of social rehabilitation and the interests of the city in re-establishing sound assessment values. These considerations underlie the study which follows and which proposes the possibility of rehabilitation of areas of wasteful flats on a basis which, if once successfully begun, might be self-accelerating and result in replacement on a large scale.

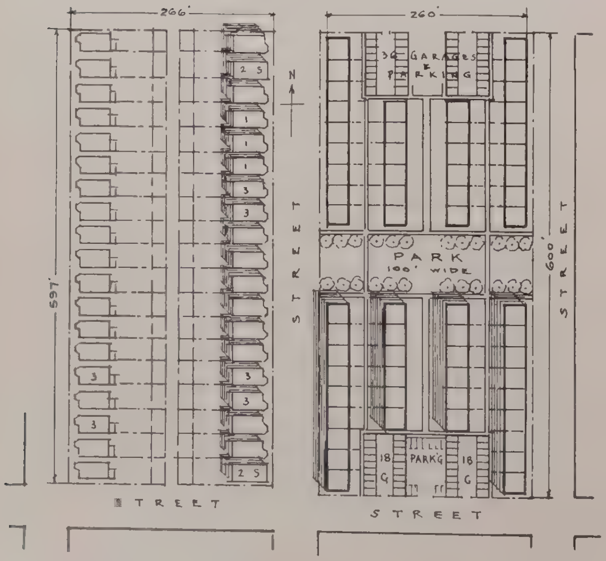
IV. VISUALIZING THE POSSIBILITIES OF REHABILITATION OF BLIGHTED AREAS

As previously pointed out, the greatest drawback to carrying on a large program of rehabilitation is our general lack of appreciation of the problem in both its requirements and possibilities. The accompanying studies, originally appearing in part in *Building Investment* (New York), undertake to show (*a*) that very desirable results can be obtained within the limits of the existing street pattern, especially in mid-Western cities where block sizes are very generous, and (*b*) that there is so much loss through the inefficient maintenance of the old buildings that, even though they may not be dilapidated or a public menace today, they might be torn down and rebuilt upon modern lines with at most a very small loss in terms of money and an inestimable gain in living values and permanent returns in city taxes.

The situation assumed is typical of Chicago, where 376,000 families, nearly 40 per cent of the whole population, now live in wasteful detached two-family flats. These deep, narrow buildings, facing streets running north and south, are so related as to fill up the generous size lot and block most of the sunlight. Fifty per cent more two-family units may be arranged within the same space, so that all rooms receive either morning or afternoon sunshine, by merely substituting modern broad-front attached flats of approximately the same living capacity, in four rows per block, running north and south with the streets. Even the interior rows are readily accessible from driveway approach between the convenient garage groups at each end of the block. In addition a cross-block park space is provided across the centre of the block. A fairly liberal financial set-up, ignoring the difficulties of purchase or land assembly, shows that at present costs and rentals the job of rehabilitation should be accomplished in such a manner as to take up all the present market value and yet provide rentals at about the same rates, while at the same time giving a modest return on the investment.

To accomplish this seemingly magical result, three factors must be counted upon: 1. The saving in space and outside wall exposure due to good planning of the dwellings, which in turn re-

Below, a typical Chicago block of two-family flats, 38 to the block; and beside it a proposed reconstructed block of 60 broad-front two-family flats, 72 garages with parking space and a 100-ft. park. Below at right are the typical floor plans for each scheme, showing how they lack, or profit by, the sunlight. All rooms in the broad-front plan are sunny either morning or afternoon



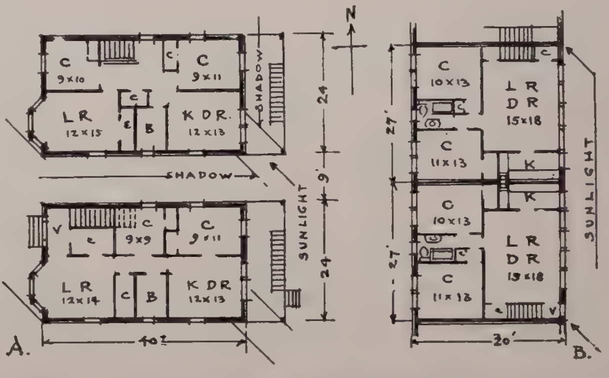


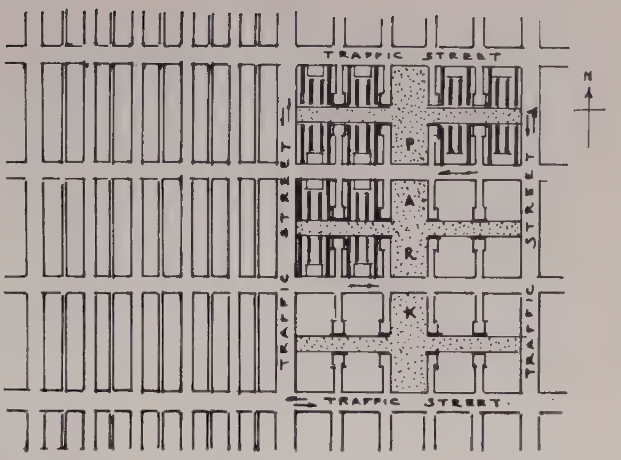
TABLE OF COMPARATIVE EFFICIENCIES OF A AND B

	A *Detached Single*	*B* *Row or Group*
Over-all floor area, each	24 x 40	27 x 28½
Gross floor area, each floor	960 sq. ft.	770 sq. ft.
Net usable floor area, each	720 sq. ft.	654 sq. ft.
Percentage of own efficiency	75	85
Space occupied by outside and party walls	124 sq. ft.	63 sq. ft.
Exterior wall exposure	124 lin. ft.	54 lin. ft.

sults in maintenance savings for heat and upkeep; 2. The reduction of rental vacancies due to present obsolescent equipment and undesirable neighborhood conditions; and 3. The reduction of depreciation due to the gradual effects of the general blight of the locality. In order to effect the last two results in a permanent degree, which would justify the new investment at the small margins of return which must be assumed, such rehabilitation can be undertaken only on a large-scale basis and through the introduction of certain positive factors for assuring the immediate and permanent better character of the neighborhood.* Here the city must be called upon for action. It has an interest at stake in that the present rapidly depreciating buildings now scarcely return enough taxes for the bare maintenance of the public facilities, and will soon fall far below present returns. The city streets and schools are fairly modern and entirely adequate for even a small increase in population, although some new assessable values must be discovered to provide for new arteries through these areas to the new districts beyond. There is in addition a scarcity of play areas in the district, while street accidents are a growing concern to city officials, and above all to the parents of young children.

THE CITY'S PART

The scheme must be large scale to be effective. The city then is asked to step in with powers (existing or possible under pending legislation in most States) to help assemble land. The project is to take place on the basis of five blocks in width at a time. Bordering streets are to be relieved of both sidewalks and local parking, which are provided internally and at block ends. The remaining four internal frontage streets are to be "dead-ended" so as to permit the hook-up of the cross park spaces to the central one of the five blocks. Thus a safety street system is to be provided (similar to Radburn) by merely removing one hundred feet of pavement and repaving with grass, the underground water and gas pipes are to remain undisturbed, and the city need not necessarily vacate the grassed



At left, normal street system five blocks wide by three blocks long, with alleys; main traffic and frontage on N. and S. streets. At right, reconstructed system of same area; boundary N. and S. streets widened to carry through traffic; cross streets made one-way traffic streets; other streets dead-ended to reach local frontage and form safety parkways for pedestrians

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*FINANCIAL SETUP OF THEORETICAL FIVE-BLOCK REHABILITATION:

The present 40 two-family units are paying an average of 6 per cent net on $6000 each, which is taken as their market value: 40 x $6000 or $240,000 becomes the land cost for the restored project. On the basis of an ownership pool a higher purchase cost is to be avoided. The present properties cost, of course, more than their present depreciated value, due to both building and neighborhood obsolescence. The new buildings, with their greater efficiency, will require less for maintenance, depreciation, and vacancies, which will permit a larger part of the rent to be applied to their increased capital costs. To this is added the reduced cost of fuel, an item of considerable importance, assumed now to amount to $100 per family, making their present rent total $520 per year with heat. Rentals in present block are:

Rental for each two-family building $70 x 12		$840
Vacancies 10 per cent		84
		$756
Interest on $6,000 value at 6 per cent	$360	
Taxes at 2 per cent	120	
Depreciation 2 per cent of original cost of building	120	
Repairs and redecoration	120	
Collection and operating expenses 5 per cent	36	
	$756	

The capital values or costs for reconstructed block are:

Value of present block, 40 buildings with land (80 families) at $6,000 each	$240,000
Carrying charges for one year at 6 per cent	14,400
Cost of 60 new buildings (120 families) at $5,000	300,000
Carrying charges for 6 months at 6 per cent	9,000
Cost of landscape work, additional utility pipes, etc.	27,000
	$590,000

The maintenance costs and rentals for same are:

6 per cent guaranteed to present owners and mortgagees on $240,000 market value	$14,400
5 per cent on 52 per cent first mortgage of $300,000	15,000
Repairs and redecoration on 120 flats at $42; $18 less than much more wasteful present building	5,040
Heat furnished for 480 rooms at $15	7,200
Depreciation 1½ per cent on $309,000	3,245
Taxes 2 per cent on $590,000—$144,000 destroyed value	8,920
5 per cent collections and management	2,740
	$56,525
Rental returns on 120 flats with heat at $520	62,400
Balance on construction equity of $50,000	$ 5,875
Less vacancies and bad debts, say 3 per cent of rentals	1,875
	$4,000

portion of the streets. The city is also to introduce an additional large amount of open park space throughout the project by the purchase, for park purposes, of the central one of the five blocks, or such other ones as may be more practicable, retaining schools and other public buildings within these blocks as far as practicable. Purchase of these parks is to be financed as a direct lien on the project in such a way as to permit the additional taxes on the remaining blocks, over and above the present taxes on the five blocks, to be applied to the interest and amortization of the park bonds. The city will be temporarily at least in a better tax position if it can maintain its present taxes instead of facing inevitable shrinkage if no action is taken. Eventually, if the presence of these open spaces is successful in maintaining the local values, the city will have retired its park bonds and will receive a surplus of taxes over those at present.

While there is a natural tendency of planners to envision the great possibilities of finer neighborhood design by scrapping the old street system and providing more ideal community patterns, there would seem to be some merit, especially where fairly modern public facilities exist, in seeing how far we may go in utilizing the present street pattern as a foundation for rehabilitation in blighted areas such as that suggested by the present studies. Certainly in this case the block sizes, as well as street orientation, are not altogether devoid of possibilities for a fairly satisfactory solution.

At this point I can anticipate the reaction of many of my readers. This is a beautiful theory, but "how is anything of this kind to be really brought about?" or "why not concentrate on a practical problem and try to first remove some of our really dangerous slums?" or "why try to start by destroying buildings which are admittedly still sound and in which people, after all, are not suffering from disease or neglect?" These questions can be satisfactorily answered if we see this great problem of city rehabilitation in the large. The solution is a practical one if we can convert present wastes in maintenance and repairs into payments on the capital costs of new modernized buildings; if it improves the conditions of vast numbers of families who suffer from the depressing character of drab surroundings and dismal quarters in a manner no less real than the hardships of those in the far less extensive slum dwellings; if it provides a really large and continuing program which will, if given a fair start, be self-stimulating rather than self-stultifying as is the case where slum clearance attempts to pay returns on artificial land prices. It is believed that such a program will do these very things. The improved communities will be so definitely better than the old, without increasing rents in even a reasonable proportion to the increased comforts and conveniences, that people will quickly occupy the new facilities, releasing more areas in which old properties may again be purchased at low costs, without constituting an actual serious loss to owners. This will, in turn, make possible a repetition of the process until entire districts can be renovated into desirable neighborhoods.

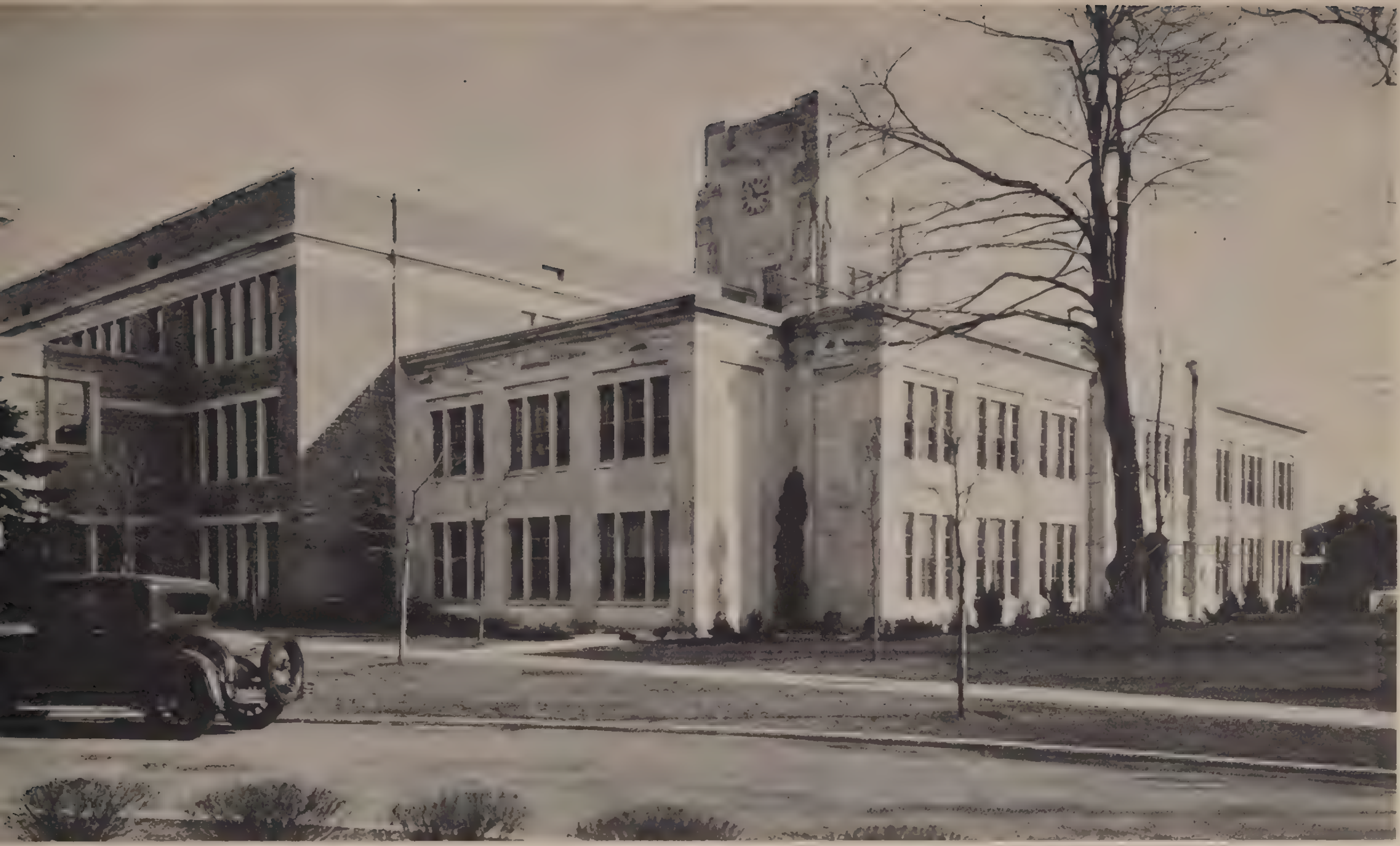
SUMMARY

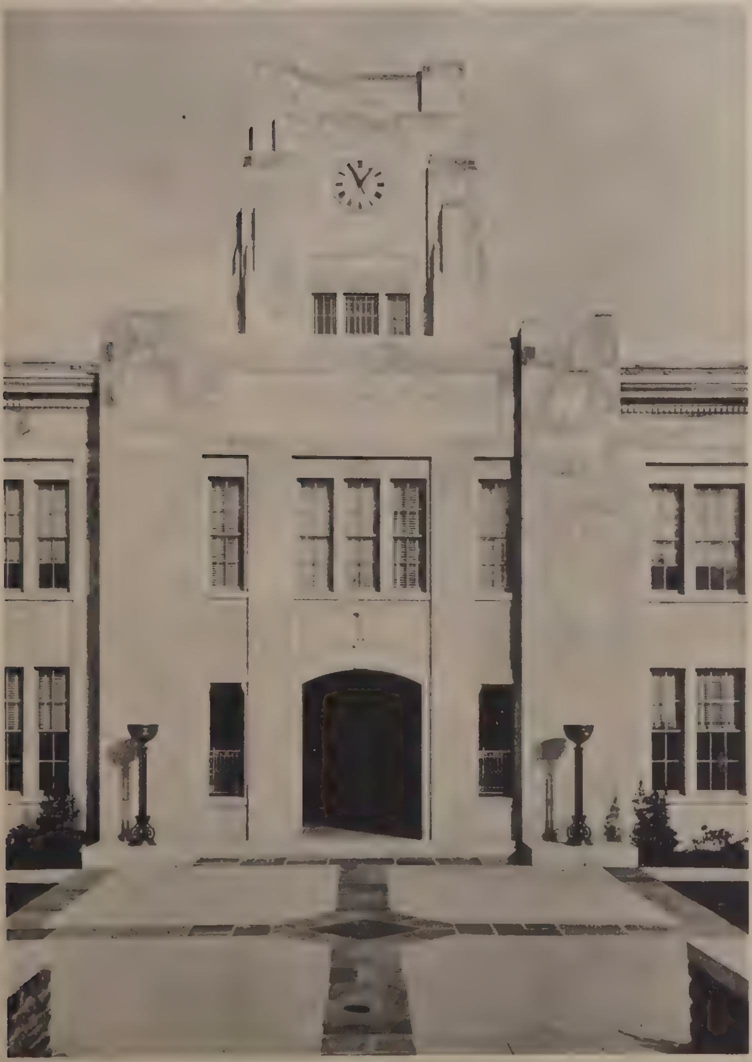
If, then, we review the situation with respect to house or dwelling types available for large areas in our cities, we find that these areas are already occupied mainly by the family of structures known as "flats"—small or medium-size multi-family dwellings providing for households ranging in number from two to six. Bad as they have all been in plan, they have survived like hardy perennials in competition with their popular rivals, the single-family house and the apartment.

There must be virtue in it somewhere to account for the survival. Might it be that this halting and ineffective job, done under a purely commercial instinct, contains the germs within it of a higher, more humane type that could be consciously evolved? Might the solution be almost under our feet—might the way to the future lie through the humble flat?

Clearly something on the order of the old-time flat, or at least equal to it in meeting average needs under city conditions, must be found. Part Two of this work* is devoted to the problem of finding such a form, through the application of modernized technique. The result is the evolution of a somewhat new type of dwelling, which is a close relation of the flat, though partaking also of some of the qualities of the row house (and indeed of the apartment); by crossing these old worn-out strains it evolves a new dwelling that retains their good qualities but eliminates their defects. We might call it a hybrid, except that, unlike the plant breeder, we are able to cross our genera three at a time—flat, row house, apartment—and produce what he might call a *tri*brid!

* To appear in the August ARCHITECTURE.

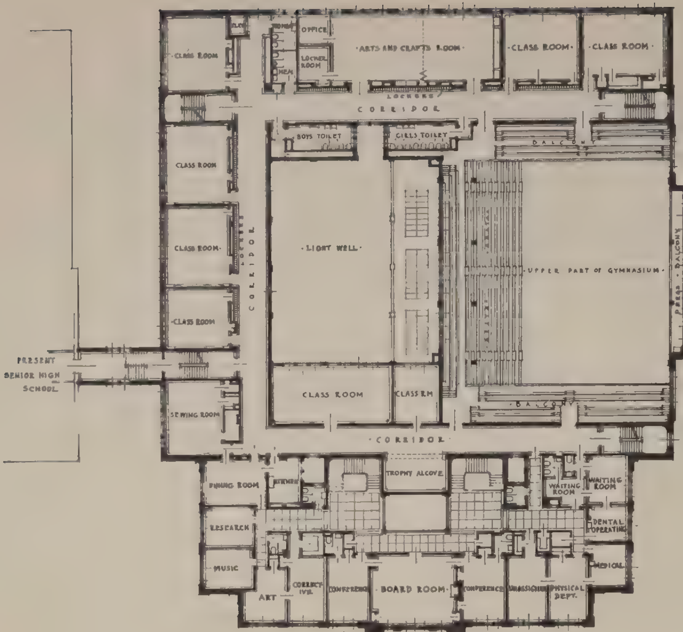




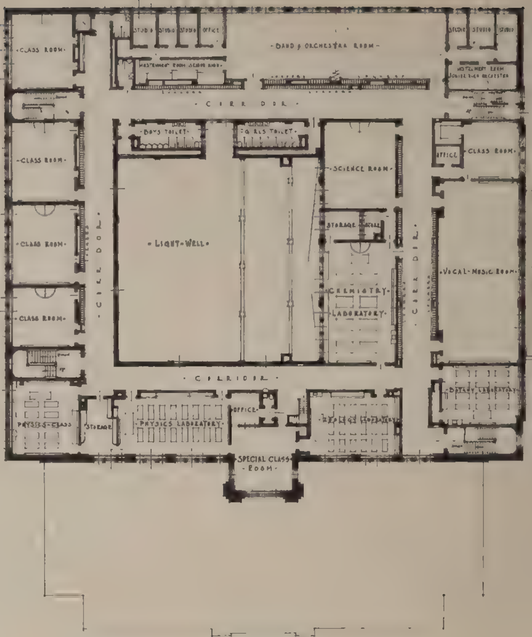
Administration Building, Lower Merion School District

ARDMORE, PA.

Savery & Scheetz,
Architects

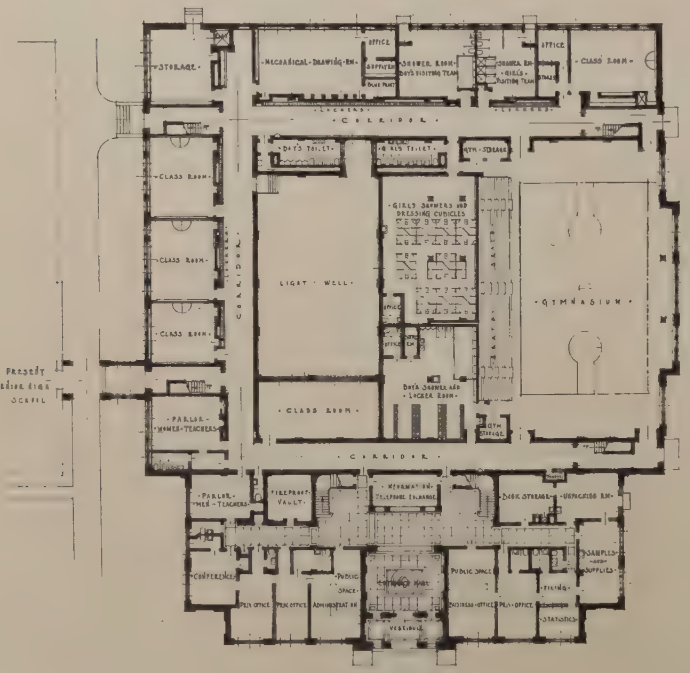


SECOND FLOOR PLAN
SCALE OF FEET

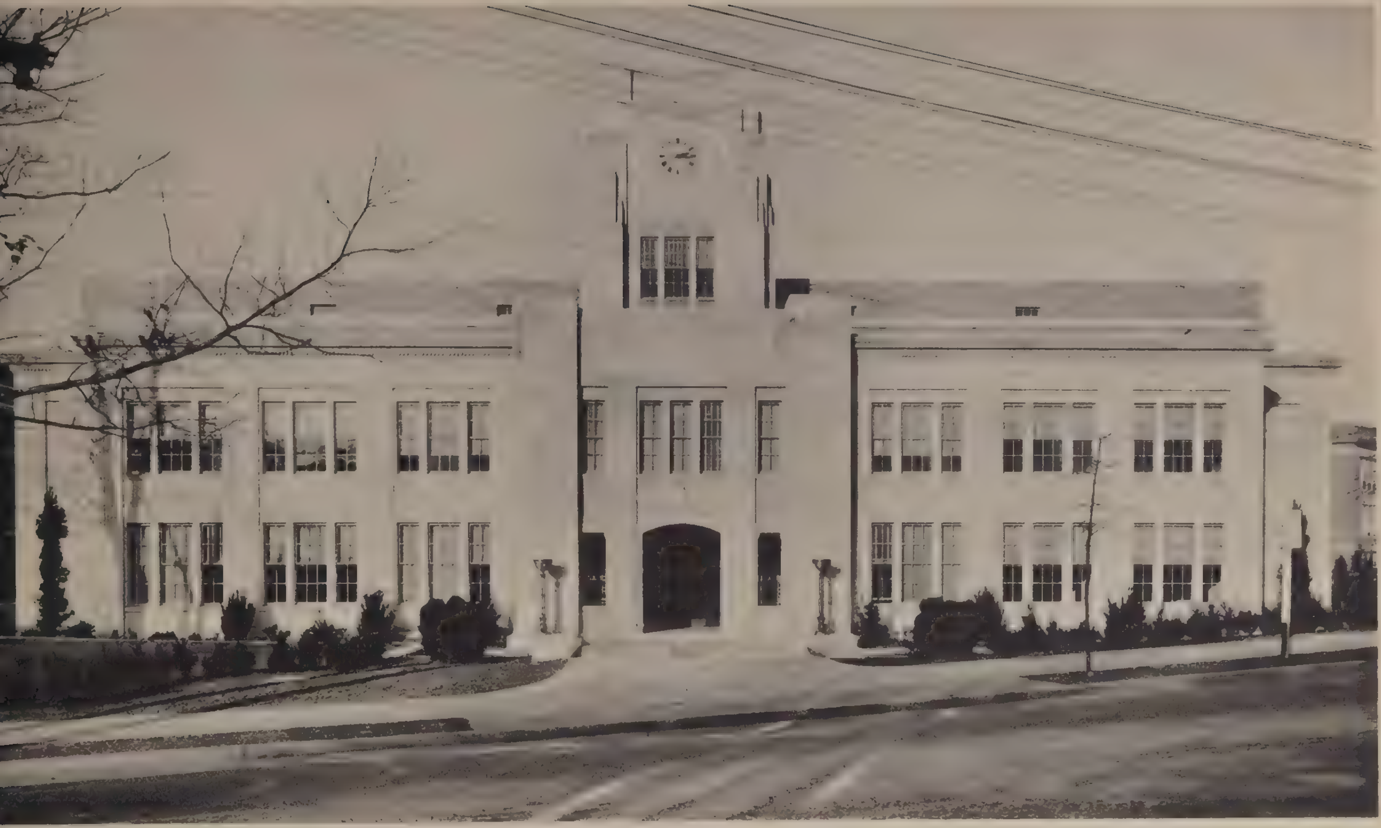


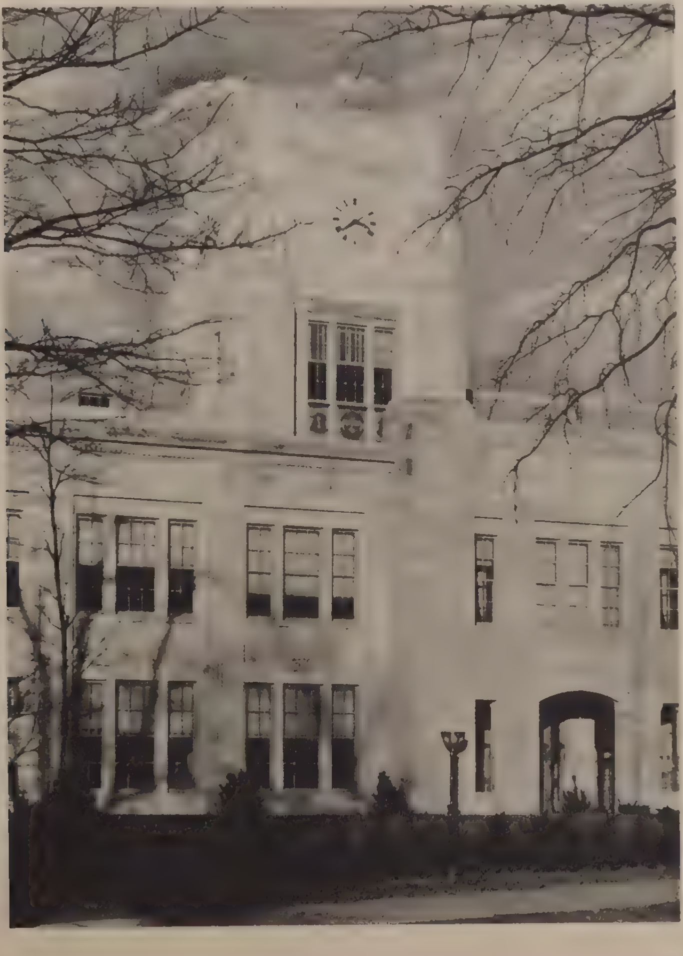
THIRD FLOOR PLAN
SCALE OF FEET

The new building consists in reality of a three-story addition to the present Senior High School of the Lower Merion School District. The Administration Building is connected with the high school by a covered way. There are thirty-five classrooms in the addition, a gymnasium in which can be seated fifteen hundred spectators, and the administration section. The latter occupies the two-story front portion, and here the business management and other direction of the entire district, containing five thousand pupils and two hundred fifty teachers, are conducted



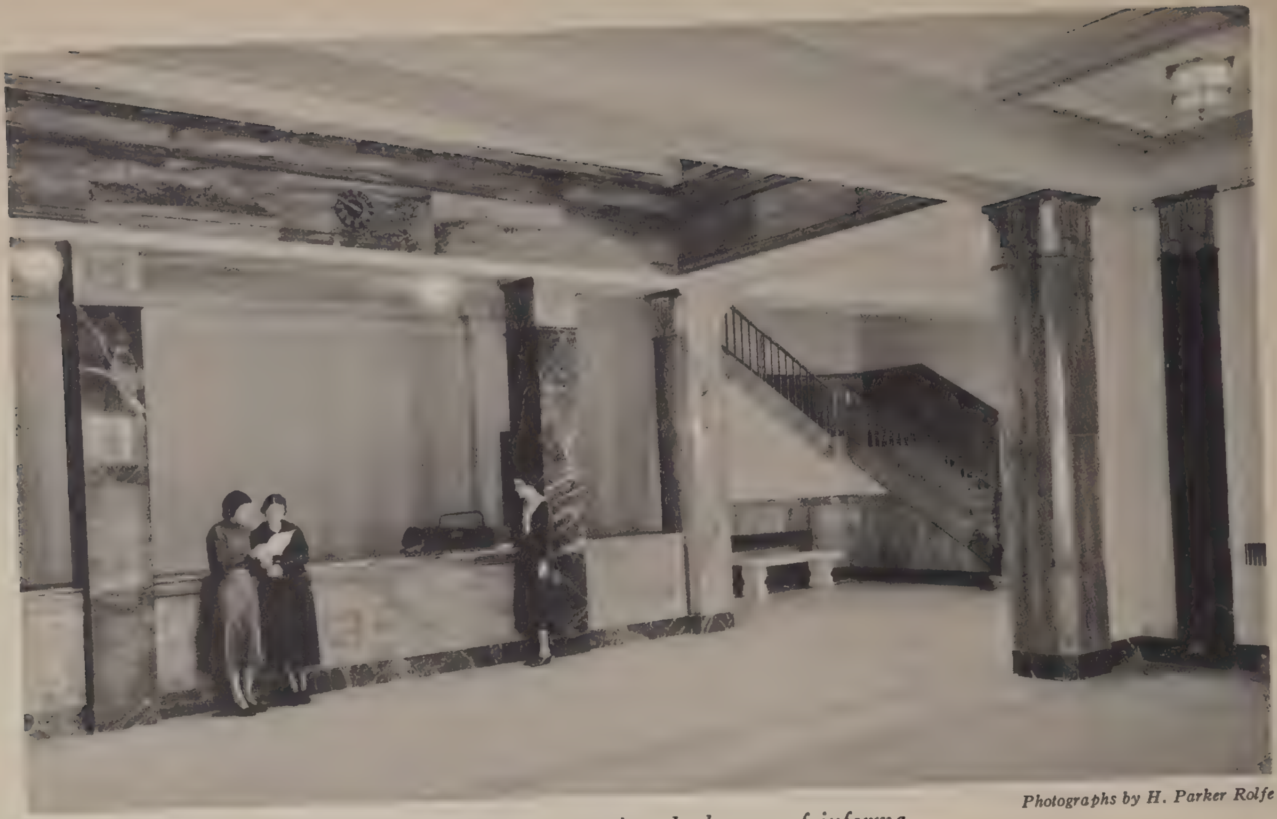
FIRST FLOOR PLAN
SCALE OF FEET





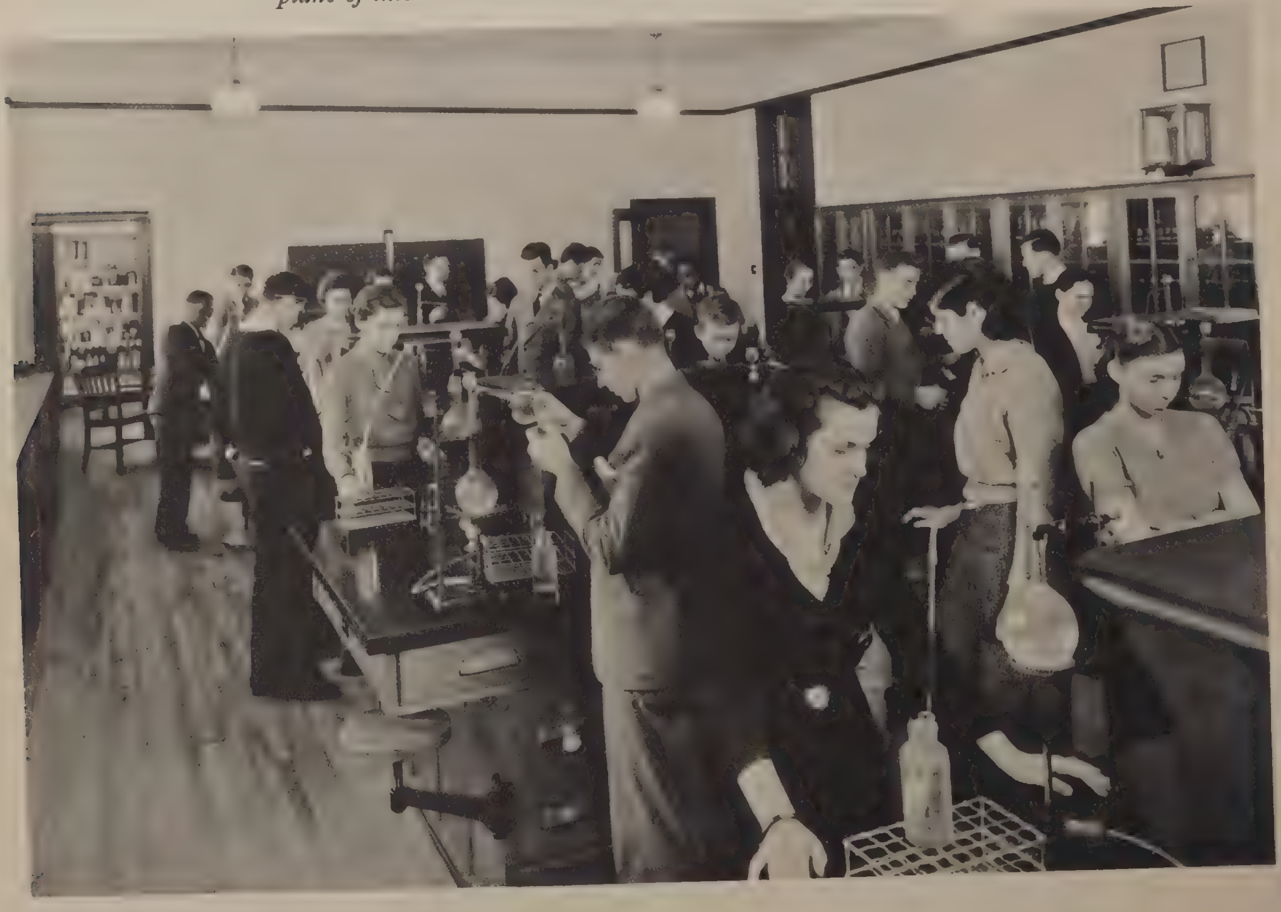
The outside walls of the building are faced with a split-face granite in a warm color, and variegated Indiana limestone having a plucked planer finish

Photograph by Albert S. Burns



Photographs by H. Parker Rolfe

Above, the lobby in the Administration Section, showing the bureau of information and telephone exchange. Below, a class in the chemical laboratory on the third floor. The diversity of modern school needs is well indicated by the floor plans of this classroom section



Some Pitfalls in Supervision

By W. F. Bartels

XXXIII. INSULATION AND ACOUSTICS

IN view of the substantial saving of heat by proper insulation, it is incumbent upon the architect's superintendent to give this matter his close attention. Whether intended for steam or hot-water pipes, the material must first be checked to see that it complies with the provisions of the specifications. The substitution of a thinner, inferior article is not uncommon in pipe covering. The thickness of the material is important, as well as whether one or two layers are to be applied. If two-layer work is called for, the superintendent must see that the joints are staggered, and that they are filled and finished smooth. This will require sharp watching, as it is easier not to stagger or break joints, and takes less time to do. If the superintendent will use contrasting colors on his plans to designate which lines are to get single and which double covering, he and his assistants may more readily inform themselves of the requirements at a glance. Besides the covering for hot-water or steam pipes, there may be covering specified for lines (such as leader lines) which might sweat. While this covering may differ from that on heating pipes, it is necessary to see that it is well applied.

The wires, or bands, which hold the insulation in position must be as called for, and as frequent as specified. Lines going through walls or floors should be covered as well as those in the open. The pipe coverers too often butt their work against the wall and call it a day. Then, too, lines in exposed portions of the building are "forgotten" until it is too late to cover them. All elbows and other fittings will probably be covered with a plastic material, which in turn should be covered with canvas to hold the material in place. If molded pieces are used to insulate the fittings they should be well wired to hold them on.

The wrapping of the single layers of pipe insulation may be that which originally comes on the material, or the architect may have specified a canvas cover to be sewed on. Other special coverings may be specified. In any case it is the superintendent's duty to see that these are where called for.

The covering of hot-water tanks, boilers, etc., is a job that needs to be well done if any degree of comfort is to be had by those working nearby. For the owner it means a considerable fuel saving. Thickness, re-enforcement, and finish will be the salient points to check in this work, and no one of these can be overlooked with safety.

Insulating a house to prevent loss of heat is getting to be almost as commonly accepted as good economy as it is to insulate boiler or steam pipes. The brand, weight, and thickness of the materials used for this purpose will naturally be overseen. It is important to inspect the installation of this work. Particularly is this true when it is being installed around doors and at window openings. No skimping should be allowed, and all ends should be tightly fitted and well fastened. It should be borne in mind that the better the job of insulating that is done the less the coal bill will amount to.

Soundproofing

The importance of soundproofing and acoustical work cannot be overestimated. Formerly it was thought of as a subject only to be taken into consideration by architects designing auditoriums and churches. At present it should be given consideration by the designer of the most modest dwelling.

Plasters of various kinds have been set forth as the very acme of acoustic perfection. Their application, as per specifications and manufacturers' directions, is the superintendent's chief concern. Some of these plasters are not as easily put on as those the mechanic has been used to working with. And while this difficulty of application may seem a trivial item to the specification writer, it necessitates much work for the superintendent. It is not as easy as it may seem for the superintendent to check the number of coats applied. The plasterer, wishing to make an extra profit, often "forgets" one coat, and, as both coats are of the same material, the lack of one coat is not readily detected. The superintendent's only assurance, in the event of his not actually having witnessed the skimping, is to cut into the work to find out whether the proper thickness has been put on.

A certain acoustic plaster was being used on a building. One-half inch was to be its thickness. The mechanics had trouble putting this much on at once. The material was "short." The manufacturer's agent, unknown to the superintendent, told the plasterers to make the coat less than one-half inch. Caught at this, the plasterers agreed to put on two coats of one-fourth inch each. The coats would not stick because of the "shortness" of the material. Hard plaster was added. It would be difficult to say which was the worse acoustically—a thin coat of the real material or a thick coat with hard plaster in it.

Many other materials besides plaster have appeared on the market, offering acceptable acoustic properties. These may vary from a structural block acting as a party wall, to a frankly ornamental hanging. The superintendent who has lived in a noisy apartment house will be in sympathy with the architect's desire to soundproof each apartment, and will do his part to see that the work is well carried out. Probably the first thing in an apartment that the architect should think of as needing soundproofing is the wall surrounding the elevator shaft. In the private house provisions may be made to soundproof certain rooms, such as playrooms and baths.

The application of sound-deadening material (other than plaster) will, like the many other trades, need to be carefully supervised. Any special precautions must be carefully observed. It must always be kept in mind that material of this sort is a factory product and hence probably more true to dimensions than the average wall to which it may be applied. Consequently the means of attaching it must be carefully supervised. If it is attached by means of an adhesive, it may well pay the superintendent to investigate the longevity of this binding agent. Perhaps a special preparation of the surface, such as shellacking or varnishing, is necessary, before the material is applied. This is particularly true where a mastic-like adhesive is to be used on a dry or spongy surface; the latter might easily absorb any of the adhesive qualities which the substance might possess.

Some acoustic treatments are of the hung or suspended ceiling type. In this work it is the superintendent's duty to see that the proper supports are provided, and that the framework or fastening to carry the ceiling is substantially erected. No waves or bumps should be allowed to occur in the finished work. Particular attention must be paid to all openings for lights or other fixtures, to see that they will be covered by their escutcheons. Too often in this work there is a tendency to cut holes in the soundproofing and hope that it is at the exact position where the ceiling or wall outlet is to come through. Any piece of material with a hole in it that is not covered by escutcheons should be ordered removed.

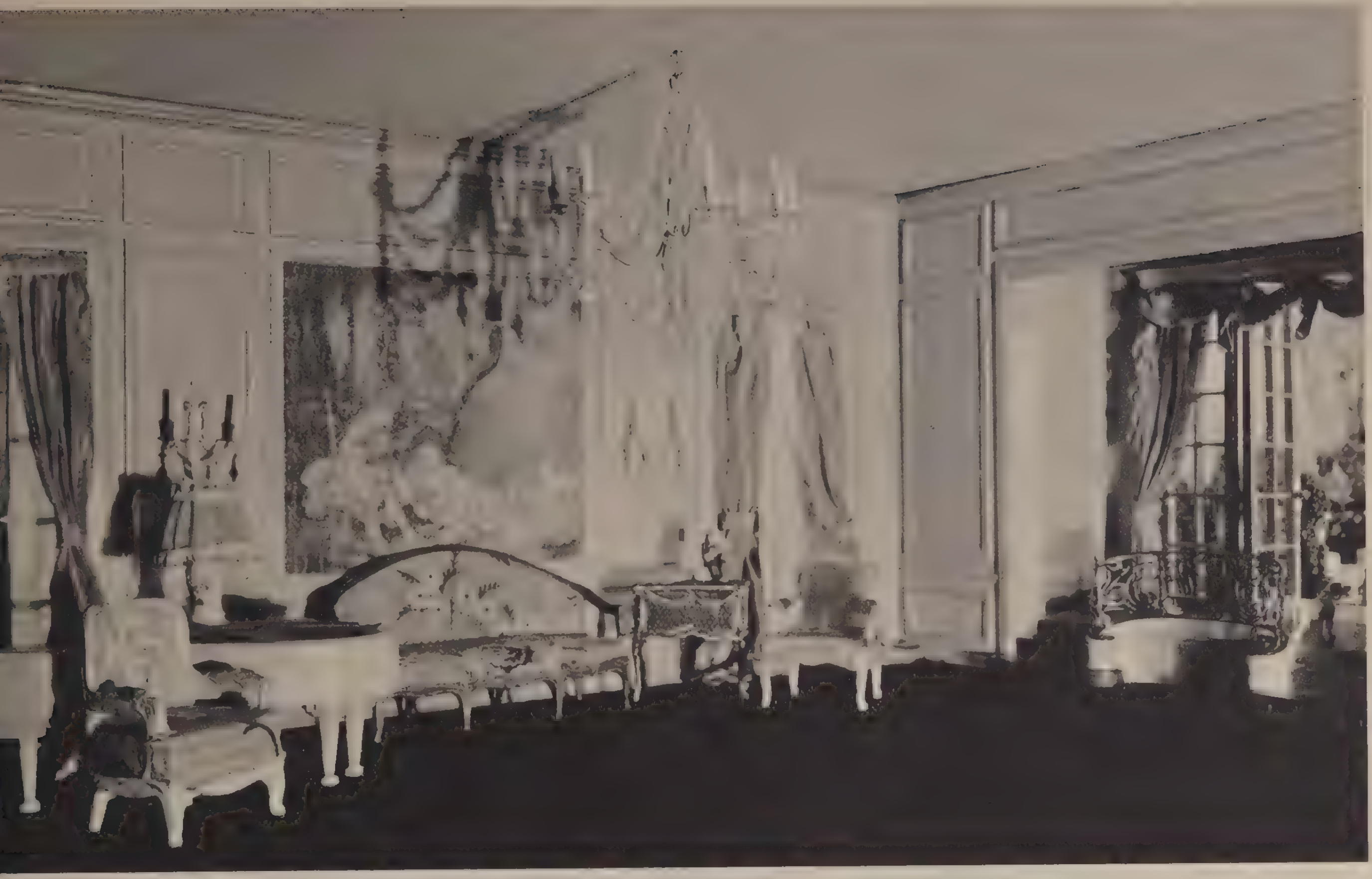
The painting of any acoustical work must be carefully supervised, and done only in accordance with the manufacturer's directions. Any filling of the small holes in the material would noticeably lessen, if not entirely eliminate, the sound-absorbing qualities. Therefore no paint work must be allowed until both the painting material and the manner of its application are approved.

ELEVATORS

WHILE the building is under construction the superintendent will have to be particularly careful to see that the elevator shaft is as nearly plumb as possible. The steel contractor is usually given a certain leeway beyond which he must not deviate in the plumbing of his steel. For the steel contractor to erect his work deflecting from the vertical makes it difficult for the elevator contractor to keep his rails plumb. The feeling of going around a curve sometimes experienced in an elevator is very often due to the improper plumbing of the rails.

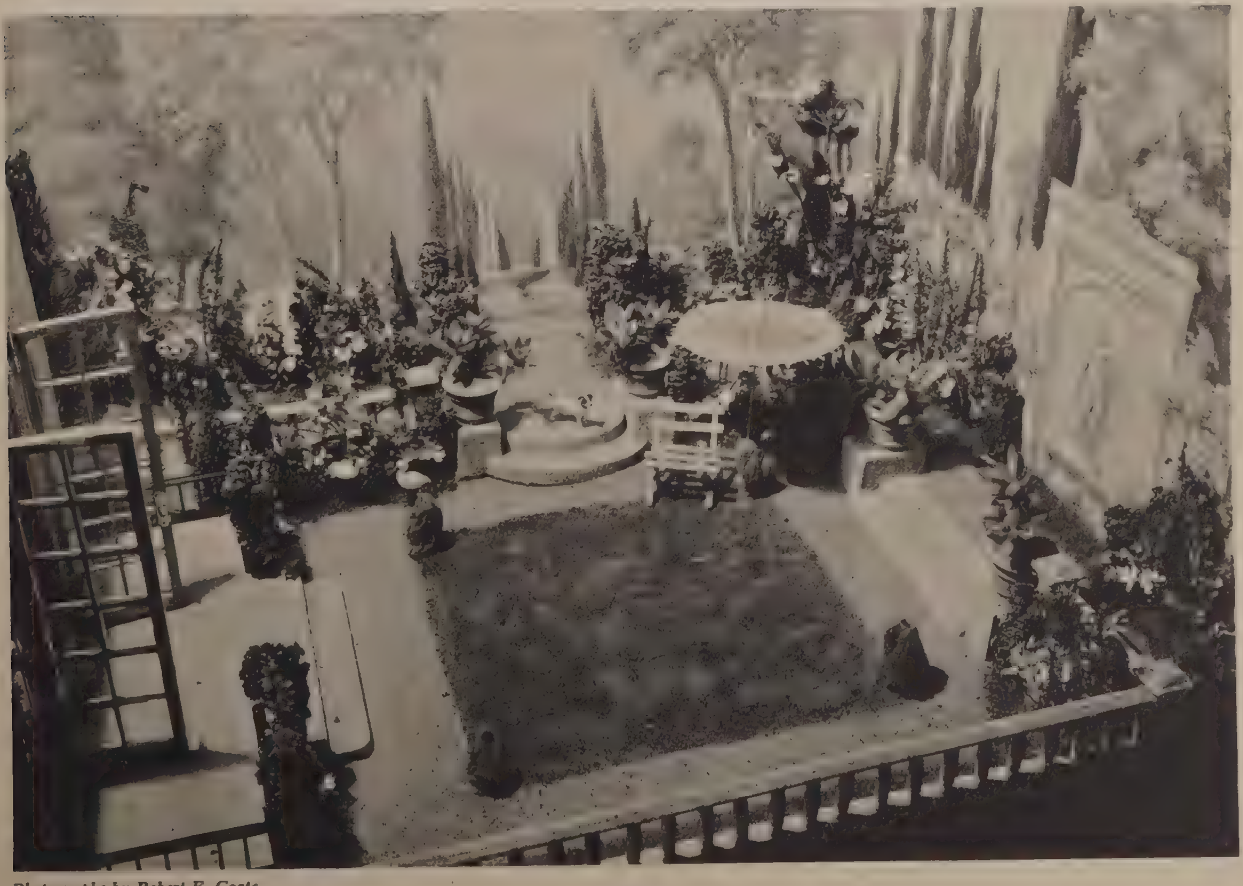
Proper securing of the guides is an important part of elevator construction. The plates holding the rails are fastened to the steel skeleton by means of bolts which go through holes drilled in the iron beams. Often the workmen, under orders from their own superintendent to speed up, will use a torch to burn a hole in the beams to which the plates are to be fastened. This produces a jagged hole and one which in most cases is too large. The workmen will maintain that they will "drift-pin the hole" (*i.e.*, drive a drift pin into the hole to make it round). More often than not this is omitted, creating a possibility that the rail will work loose. A more acceptable way is to burn a hole and then drill it out—but the drilling must not be forgotten.

(*To be continued*)

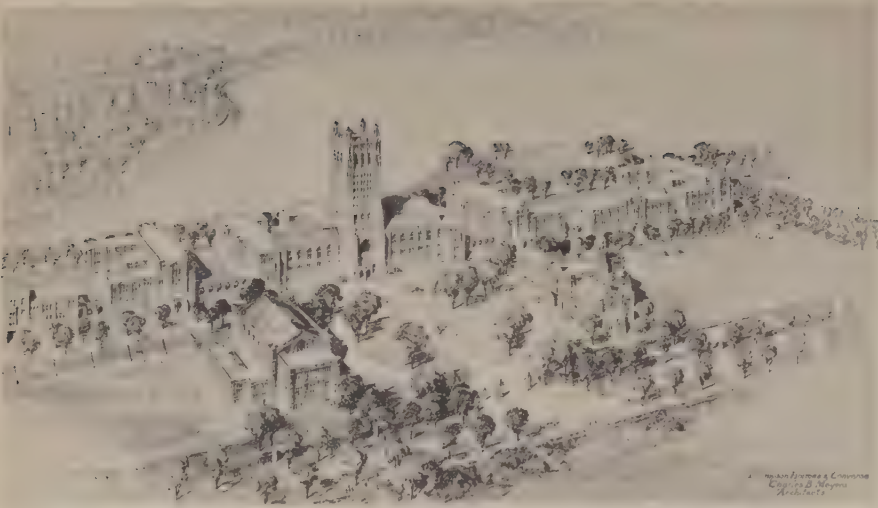


An Achievement in Model Making

The John H. Hutaff studios recently exhibited a one-inch scale model of several rooms with an adjacent garden, representing an American country home. The paintings, panels, and garden background are by A. Vimnera. The furniture and accessories were modelled with meticulous care upon original pieces in the Hutaff studios



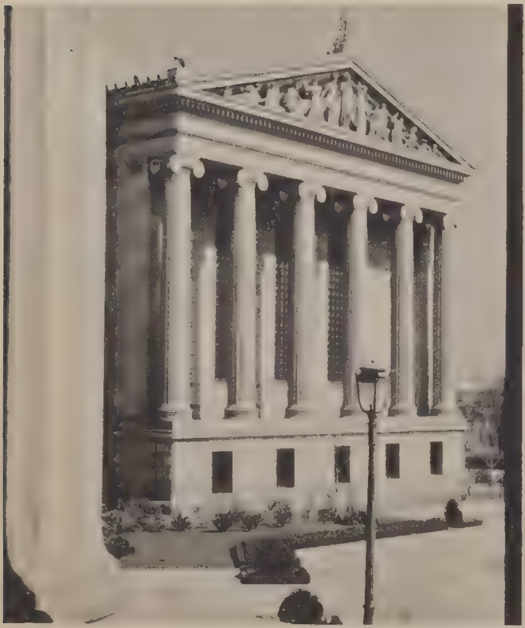
Photographs by Robert E. Coate

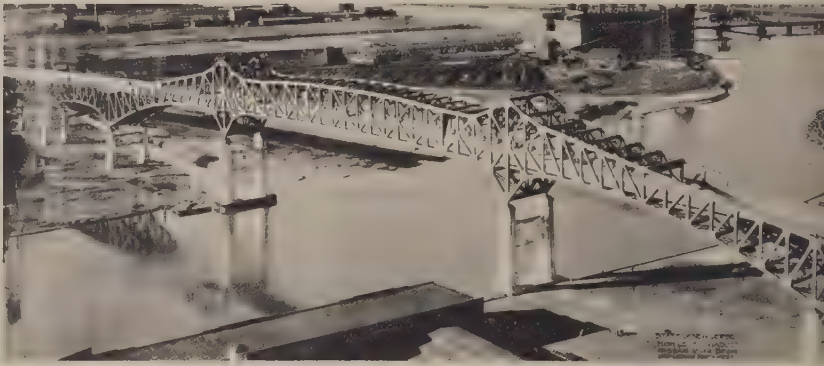


Architectural News

A bird's-eye view of Hunter College of the City of New York, the central unit with the tower still to be built. Thompson, Holmes & Converse; Charles B. Meyers, architects

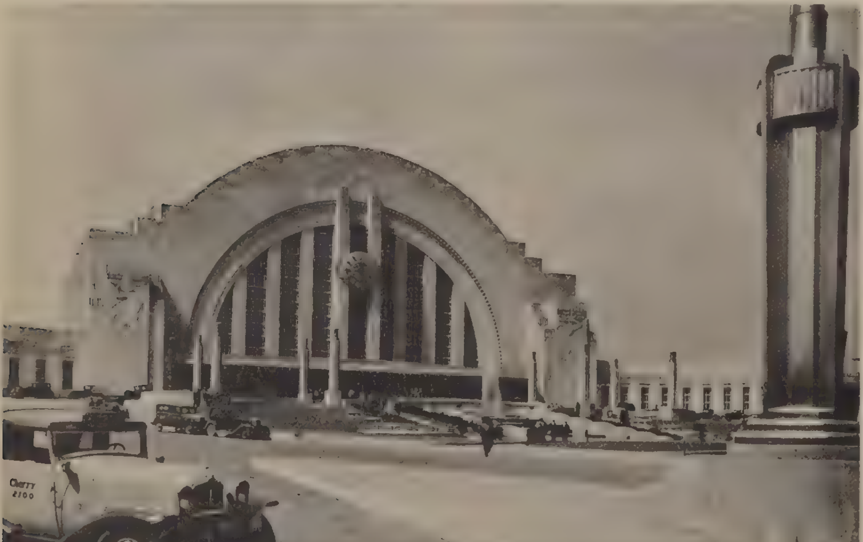
First-prize winner in the A. I. S. C. 1932 award for the most beautiful bridge of steel costing over one million dollars—High Level Viaduct over the Jersey meadows. Jacob L. Bauer, State Highway Engineer



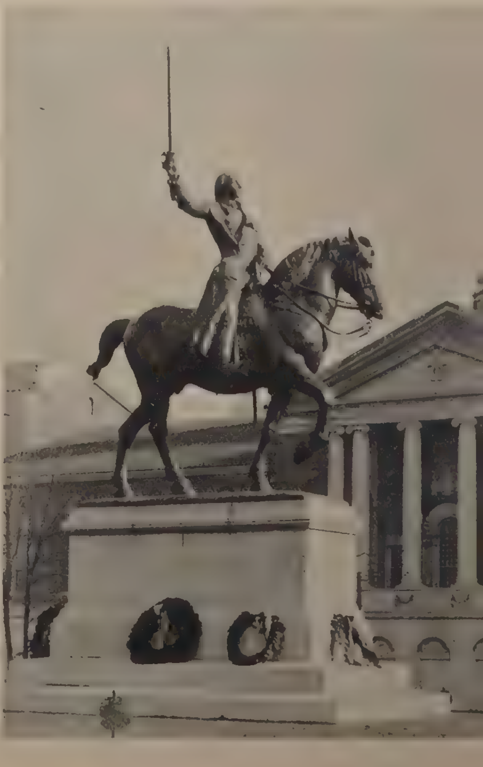


North wing, Pennsylvania Museum of Art, with the new polychrome terra-cotta tympanum. Horace Trumbauer, C. C. Zantzinger, and C. L. Borie, Jr., architects; C. P. Jennewein, sculptor; Leon V. Solon, colorist

Below, statue to Lafayette unveiled last Armistice Day in Hartford, Conn. It is the gift of Mrs. W. M. Storrs, and is a replica of Paul Wayland Bartlett's bronze in the Louvre



The Cincinnati Union Terminal as seen from the main approach. Alfred Fellheimer, Steward Wagner, architects and engineers. See waiting-room on facing page



in Photographs

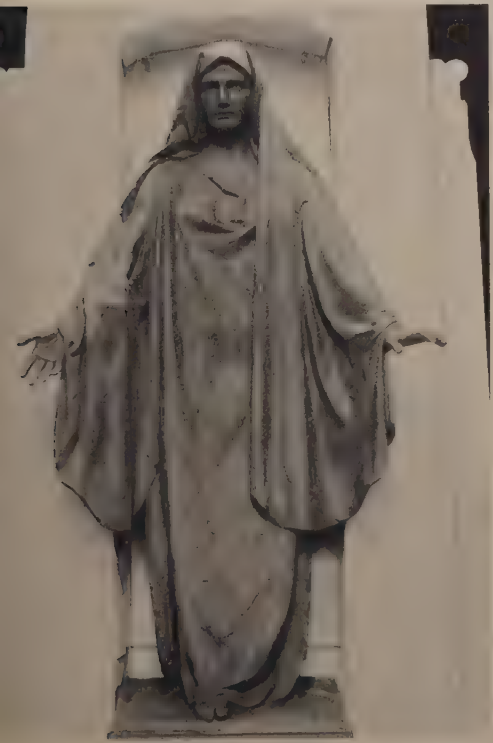
Vocational Institute for New York State at Coxsackie, N. Y., a contract covering most of which has just been awarded. Thomas & Baker; Thompson, Holmes & Converse, Inc., associated architects

French King Bridge over the Connecticut River received the A. I. S. C. award for bridges of medium cost. A. W. Dean and G. E. Harkness, engineers

Delaware County's new $4,000,000 court house at Media, Pa. The photograph shows the central portion of the south front. Clarence Wilson Brazer, architect

© 1931, Clarence W. Brazer

Below, "The Spirit of Nursing," by R. Tait McKenzie, R. C. A.—central figure for the memorial to Jane A. Delano and 296 nurses who died in the World War, in the Garden Court of American Red Cross Building, Washington, D. C.



The interior of the Cincinnati Union Terminal with its waiting accommodations near the train gates. Alfred Fellheimer, Steward Wagner, architects and engineers

The Editor's Diary

Thursday, April 27.—Lunched with Harold Rambusch, and when Leon Solon joined us there naturally developed a vigorous argument on color. As a result of many years of experience in the use of color, Rambusch, with apologies for such an arbitrary dictum, said that he was convinced that the smaller the pallette, the better chance of success in a color scheme. When the artist uses two colors—and possibly gold—the chances for a successful result are good. If he adds one more color, the chances are less; if he adds two more colors, the chances are that the scheme will be a failure. Rambusch said that this general statement, like all others, is subject to exceptions, but in the main, it is a fairly reliable guide.

Friday, April 28.—Myron Bement Smith tells me that he has given up his work as General Secretary of the American Institute for Persian Art and Archæology to accept a research fellowship under the American Council of Learned Societies. He will spend the next year in an investigation of the pre-Islamic and early Islamic architecture of Persia, with special reference to brickwork.

Saturday, April 29.—I see that John Ihlder, executive director of the Pittsburgh Housing Association, is one of a group of officials from American cities who will visit Germany and Austria this summer in a brief study of German municipal government—which worthy purpose would seem possibly to be a bit of a task at the moment. Government in Germany seems unable to stay put for long enough to permit of study. Incidentally, I hear that Bruno Taut, Walter Gropius, Peter Behrens, Josef Hoffmann, Erich Mendelsohn and others among Germany's leaders in art, have felt obliged to flee the country.

Monday, May 1.—James M. Fitch, Jr., joins the ranks of those who are concerning themselves with what the architects will design, if given the opportunity, next month or next year. He says:

"Isn't there some way in which architecture can be made a more exact science, so that it will not repeat the monstrous blunders of the past few years? In Birmingham I am always depressed by one downtown corner, on all four points of which stand buildings over twenty stories in height, yet down any one of those four streets you can see the open country near at hand. If architecture is to have any future at all, I think it must closely approximate the course of all other branches of science, and plan to learn by experience. It must look at the crippled city of today, and try to diagnose its many ills, and then show some initiative in trying to cure them. It must try to reconcile the permanent structure to the shifting land, for it seems to me that this is the crux of the matter. This is much more evident in a city the size of Nashville, my own city, than, say, in Cleveland, for here we have the genial Southern habit of ignoring facts out of existence—the main fact being that around the city's heart there is a ring of dead wood that must cover fully 30 per cent of the city's incorporated area. Is anything done about this? Not on your life! A viaduct is built over it, and the rich people move out to the country, blandly ignoring the enormous waste of money, materials, and labor that these areas represent. I don't say that the architects are responsible for this condition, but they do not pay it enough attention. As far as I can tell, we have reached in America our second stage—assimilation of our conquest. Rather than pushing our city limits out farther each year, we should resolve to do something about what is already incorporated. Here is the opportunity for the architect to take the long view, and, incidentally, benefit himself eventually."

Julian Clarence Levi, who for his work as president of The Architectural League in trying times, and for his unselfish efforts in the work of emergency relief, has been presented with the President's Medal of The League

Tuesday, May 2.—Ely Jacques Kahn tells me that the Carnegie Corporation has given him a roving commission to investigate the matter of art education. Do we buy our designs for the crafts abroad, or do we use our own? Where do these people learn how to design wall papers, or fabrics, or furniture, and how? Are they being taught in the best way? Kahn is looking around this country first, and then is going abroad. Incidentally, he tells me also that all of the advanced teachers of art have left Germany, all schools conducted under modern methods being closed by edict. Germany is apparently trying to turn back the history of art to old Nuremburg, and fix it at that point for present use.

Wednesday, May 3.—Professor R. Norris Shreve, of Purdue University, has reported to the American Chemical Society the details of his development of a synthetic building stone made out of limestone quarry wastes. In the Purdue laboratories the stone was perfected by causing a chemical reaction between pulverized shale and an alkaline earth base, the action taking place under pressure in polished steel forms. The new synthetic stone may have its original color or be varied through integral materials. The chemical reaction between the alumino-silicic acid and the alkaline earth base is completed by two hours of cooking under steam in an indurator. The whole process of grinding, mixing, pressing, steaming, and finishing takes barely a day.

Thursday, May 4.—Kenneth Murchison, William F. Lamb, and I, as the architectural members of a jury which included also Messrs. Moisseiff and Byrne, engineers, dined together at The American Institute of Steel Construction offices with Mr. Frankland, and judged the final stage of the students' competition for a bridge design.

Afterwards we went to The League to witness the installation of Arthur Loomis Harmon and a row of distinguished vice-presidents, delegates, secretary, and treasurer, to launch The League on a new year of activity. Julian Levi, retiring president, turned over the gavel to the new president in the presence of a company of ladies and gentlemen, many of the latter being past officers in the organization. Ralph Walker was unwilling to allow the transfer of authority without expressing the tremendous gratitude to and admiration for Julian Levi, who has carried a staggering burden in the management of the club's affairs, and, on the other shoulder, the work of the Architects' Emergency

Relief. President Harmon introduced Hobart Upjohn, who, in the gallery containing an exhibit of the work of the three Upjohns covering a hundred years of practice, told us particularly interesting and many amusing incidents of early architectural practice in America.

Friday, May 5.—I see that sculpture is looking up. A. A. Weinman has just been given a government commission for Delano & Aldrich's Post Office Department Building in Washington, amounting to $260,000 worth of sculpture. James E. Fraser is to do the work on York & Sawyer's Department of Commerce Building, the contract amounting to $136,000.

Saturday, May 6.—I was rather surprised to learn that more than one half of the new homes built in 1932 were financed by Building and Loan Association mortgages. The United States Building and Loan League reports that only 10 per cent of its funds for lending went into mortgages on newly built homes. The remainder was for refinancing of home mortgages held by other institutions, some for remodelling loans, and others for purchase of existing homes. The average mortgage loan for a newly built home in 1932 was $2,685. This compares with $3,500 to $3,600 for the period 1928–1930.

Monday, May 8.—In all this talk about slum clearance and housing, there is one point which, it seems to me, has not been sufficiently stressed. It is easily argued that the State's responsibility for a decent housing of its citizens is no less marked than the responsibility which it already accepts for medical care in the schools, hospitalization, alms houses, old-age pensions, etc. Nevertheless, in any proposed subsidy for low-cost housing, there is no justice in granting such subsidies merely for the sake of paying fictitious land values. Such action means subsidy of the land owners, rather than subsidy of the housing. Until we reach some sort of an agreement as to the proper way in which to value land used for public purposes, there is always this stumbling-block in the way.

Wednesday, May 10.—Diego Rivera has been dismissed from the job of completing the Rockefeller Center frescoes, which, in view of the artist's predilection for painting propaganda, is not surprising. The specific objection of the Rockefeller managers was directed at the inclusion of a picture of Lenin in the composition. Probably we shall hear a lot more of this in the press or in the courts before it is finally determined just how much right a painter possesses in the matter of expressing his own views and convictions rather than those permitted to him by the building owner.

Thursday, May 11.—Lunching with Norman T. Newton and David Coyle, a discussion of art as induced by the Rivera-Rockefeller Center episode brought out a new system of classification. Some of the modern painters and their following seem to feel the necessity of powerful punch and startling color. This school we might call the "Boo!" school. On the other hand, the quiet, peaceful representation of classic figures, or dreamlike subjects, might easily be dubbed by the modernists the "Blah!" school. So there we have the two distinct schools: the "Boo!" school and the "Blah!" school.

Friday, May 12.—Drove over into Pennsylvania, stopping off at Trappe, Pa., to see the Augustus Lutheran Church which was built in 1743. This, the cradle of Lutheranism in America, is a curious expression of German rural architecture—a simple rectangular plan with a gambrel roof and a porch at the middle of a side and at the middle of one end. The shell is of brick, the interior woodwork all very primitive, of hand-hewn oak, with a steeply inclined gallery at one end and along one side, and a raised octagonal imported pulpit of walnut. There is no provision for heating the building; the stone-paved floor was covered in winter with straw, and unless the worshiper brought his own hot brick he kept himself warm by faith. Unfortunately, along about 1814 the hewn oak posts were painted to imitate marble, and this desecration has never been removed.

Saturday, May 13.—The Diary had quite a lot to say on Friday, March 10 (May issue), about the house of F. Knight Sturgis, in New York City, which closely resembles one which Robert Adam built in St. James's Square, London. Apparently the way to be set straight in this world is to make a public statement, and then await corrections. In this case it transpires that Stanford White had nothing whatsoever to do with the Sturgis house, which, it appears, was designed by Ogden Codman.

Monday, May 15.—Professor H. Vandevoort Walsh, professor of architecture at Columbia, says that America is not likely to have mass production of houses because the market is too restricted to make such procedure profitable. He points out that the long record of what he calls a wild-goose chase in quest of the standardized house produced on a large scale has continued for many years, enlisting the efforts of many inventors, even Thomas Edison, and that to date the results are not encouraging.

Wednesday, May 17.—Spent a few hours with Robert L. Davison who, under the Pierce Foundation, is trying to simplify, improve, and standardize the various parts of a house so as to bring a product that is twice as good for half the cost. In direct contradiction to Professor Walsh's theories, Davison is convinced that we are well along on the road to a successful product. In his researches he has been particularly fortunate in being tied to no industry and no product, so that he is free to choose from the world's supply that which is best for any particular purpose. The bedroom and kitchen—the two most complex units—are in a finished stage of development, almost ready for marketing. The matters of exterior walls, partitions, floors, and roofs are still proving difficult problems. Incidentally, Davison tells me that the hardest part of his job has been to persuade men in the industries that a particular unit can be made, even though departing radically from the established forms. The icy grip of habit and tradition rests heavily upon most of our manufacturing processes.

Friday, May 19.—Talked with Henry Wright regarding the publication of his findings concerning the housing problem—the work of many years. Now that we are apparently ready to embark upon a really adequate programme of public works—a measure which would have been effective on a much smaller scale if we had not waited so long—the question is whether the architects of this country know what they should build. It would be a tragedy if the old forces of speculative building were again unleashed to spawn unneeded and unstudied buildings on this country. It would be a tragedy if, with the means and energy of a nation behind us, the architectural profession should prove incapable of supplying the leadership and technical skill needed to achieve results worth while.

Saturday, May 20.—John K. Wright, a Providence architect, finding himself unsought at the moment by clients, nominated himself as a client, designing a year-round cottage to fit his own needs. Unlike most architects, however, he was not content with designing the house, but went ahead and built most of it with his own hands—which is one way of meeting the depression.

Monday, May 22.—Lunched with M. D. C. Crawford, who knows more about textiles, ancient and modern, than most men—a subject, however, upon which we scarcely touched. The matter worrying us at the moment was the probability that, with the tremendous acceleration of machine design in this age, there is a grave danger that we, as a people, may lose the fundamental basis that has enabled us to create these tools—and inevitably fall back. The point is this: each bit of machinery that we have devised sprang originally from hand processes. It was only by developing an extremely high degree of manual skill that we were able to invent machinery to do the thing better than the hand could do it. Having once left that basis, and with generations coming along that will have no such dependence upon these fundamental bases, is it possible that we can continue to go forward as rapidly, or even at all? Professor Whitehead, of Harvard, recently astonished the student body, and the faculty as well probably, by saying that the next advance in the development of mankind must be a further education of his hands rather than of his mind.

Tuesday, May 23.—The Grand Central Art Galleries this afternoon turned out to be a regular "old home week" for scores who wanted to see Dean Cornwell's cartoons, color studies, and detail sketches for his Los Angeles Library murals. Orson Lowell, Jack Sheridan, Herb Roth, W. T. Benda, Lowell Thomas, and Frederic Hirons were enthusiastically congratulating Cornwell upon his draftsmanship, composition, and meticulous study of detail. When one sees these hundreds of detail studies—studies down to the matter of a few knuckles on a clenched hand, or the drapery of a cope, one no longer marvels at the fact that Cornwell took five years to do the job, painting every inch of the murals himself. Part of the time, with a broken leg he was hoisted before the walls in a boatswain's chair. The masterly quality of the line in these murals can but faintly be sensed in the photographic reproductions in the last issue.

Wednesday, May 24.—Lunched with H. T. Lindeberg and Royal Cortissoz, discussing many things, and among them the relief and pleasure with which one meets the two little low buildings fronting Rockefeller Center—a pleasure that is made up of many things unquestionably, but largely of their low height, the clean simplicity of their lines, and the open space about them. Incidentally Paul Jennewein's doors for the British Building, gold figures on dark blue, make a stunning focal point.

Thursday, May 25.—There has been an unusual exhibition in the main gallery of The Architectural League, a collection of material for use in small churches. There are altars, crosses, tabernacles, pews, altar rails, fonts, riddle posts, dossals, carvings, and paintings. The exhibition, which was held under the direction of the Liturgical Arts Society, is intended to show that cost is not necessarily an accompaniment of art. Practically all of the items shown are simple and relatively inexpensive. The exhibition should be productive of much good in raising the standards of liturgical art.

A wood carving by Adam Dabrowski—one of many interesting examples of art and craftsmanship in the Liturgical Arts Society's exhibition

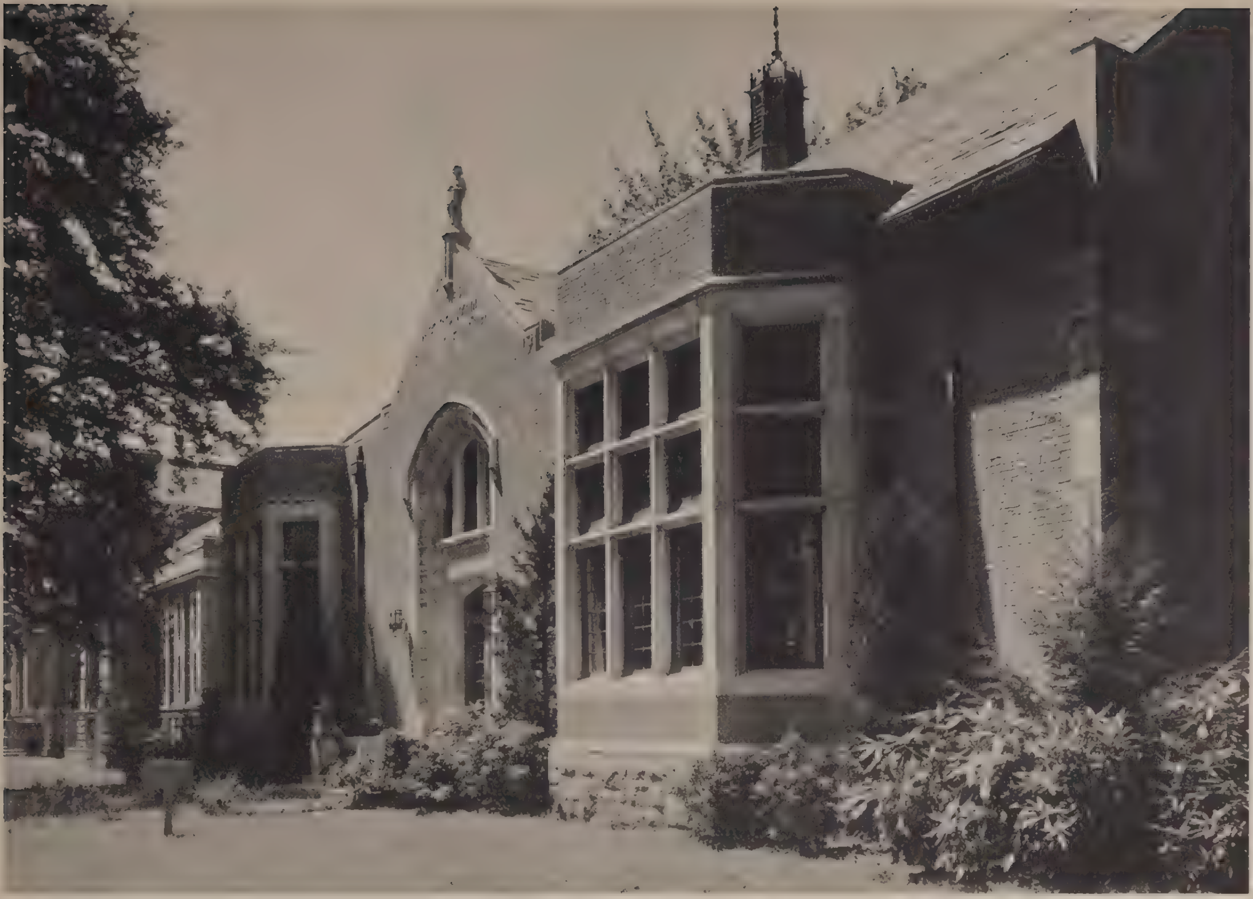
One of some three hundred studies made by Dean Cornwell in the creation of his murals for the Los Angeles Library

Saturday, May 27.—Residential building is well on the mend, according to the reports for the first half of May, as compiled by the F. W. Dodge Corporation. In the thirty-seven States east of the Rocky Mountains, the total for residential building increased 36 per cent over the first half of April. This is a reversal of the normal April-May decline of 10 per cent. If the rate continues through the rest of the month of May, it seems likely the total will exceed May, 1932, and it would be the first time since the spring of 1931 that residential building has risen above the corresponding period of the previous year.

According to the Bureau of Labor Statistics, United States Department of Labor reports from 778 cities having a population of ten thousand or over, the increase of building construction in April this year over March was 21.2 per cent. This increase was greater than that shown in comparing these two months in any of the previous three years.

Monday, May 29.—Hewitt & Brown, architects of Minneapolis, have compiled a very interesting summary of business conditions, further accented with a chart. The conclusions to which their inquiries point are that in previous recoveries from building depressions, the owner invariably loses considerable money by not being foresighted enough to take advantage of the upturn. Buildings erected on the heels of a depression fail to secure the advantage of depression prices for two reasons: first, decisions to build do not crystallize until the rising market is under way; second, the most important money-saving period, after the upward trend is recognized, is consumed with investigations, studies, and preparation of plans and specifications. In a word, the lesson is, the time of depression is the time for making building plans.

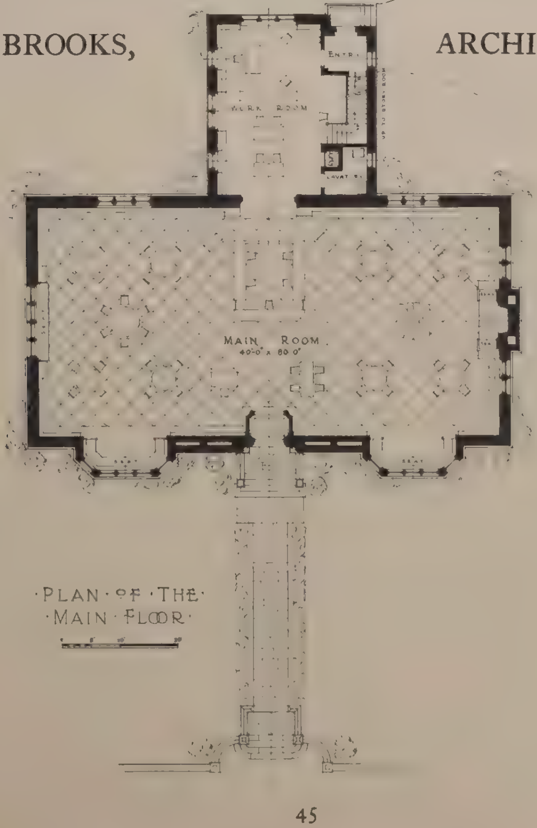
Wednesday, May 31.—I see that further details of the well-concealed efforts of Robert L. Davison in the Pierce Foundation investigations looking toward bettering our less expensive methods of building, are coming to light. According to the *Journal of the American Chemical Society*, vinyl resin is being studied very hopefully as a wall material, incorporated with a stiff backing of insulation. This vinyl resin, which is not unlike bakelite and similar substances, is used as a fairly thin coating on its supporting slab for standard wall panels, doors, ceilings, and floors. It is possible to finish the material in glossy or a sort of dull honed surface, and in any color. It has a high abrasive index, is inflammable, and is unaffected by most of the chemical or mechanical agencies which tend to damage building interiors. We shall probably hear more of this material in the building industry.



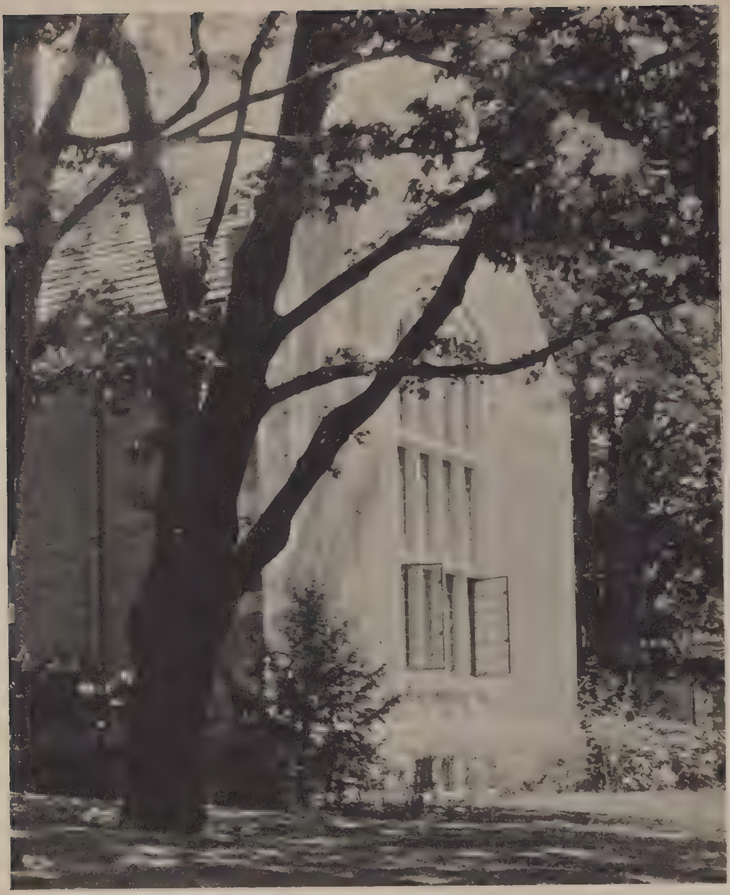
A Children's Library

THE MARY RICHARDSON HAWLEY MEMORIAL LIBRARY, NEW BRITAIN, CONN.

W. F. BROOKS, ARCHITECT

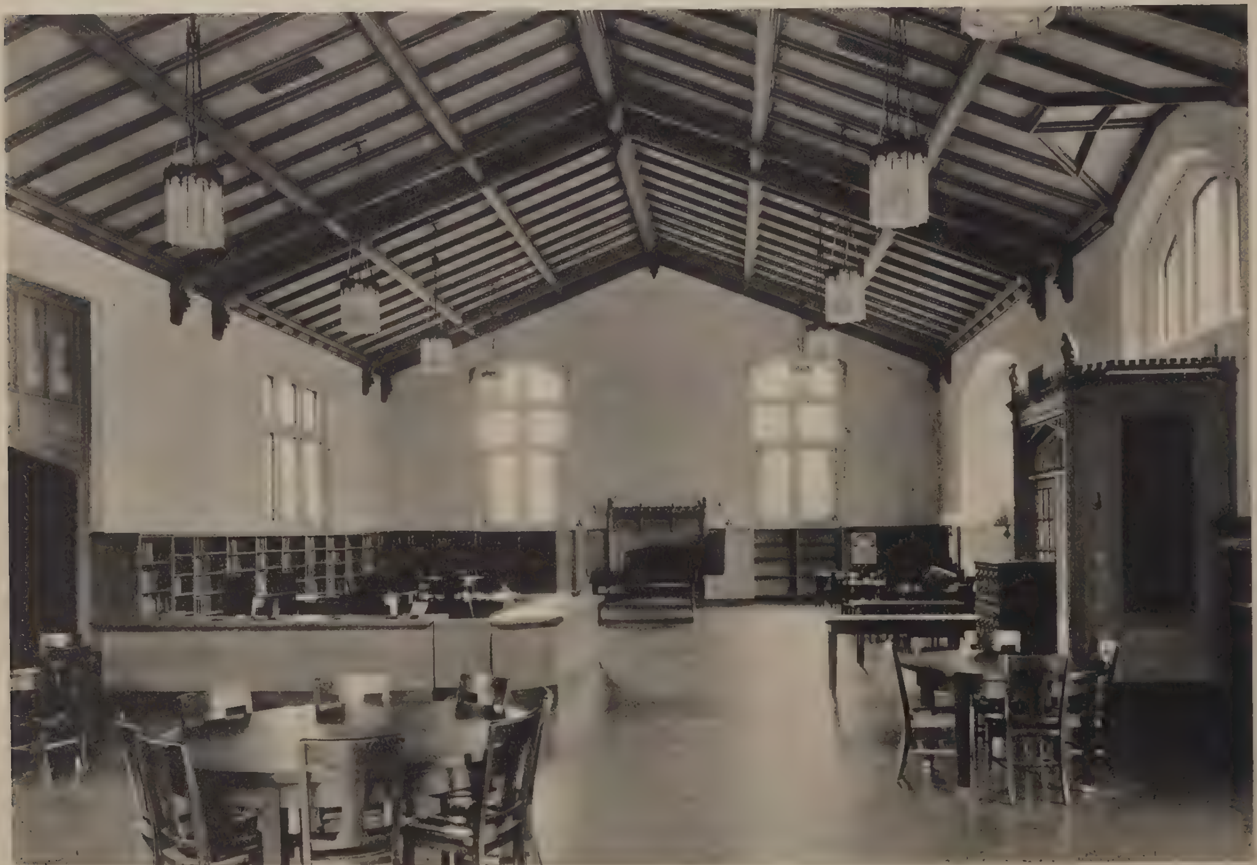


This building was presented to the Public Library of the City of New Britain for the exclusive use of children. It is adjacent to the main library, and faces the same street, differing in style of architecture from the main building in order to give it individuality as a memorial, although a certain unity is preserved by a color scheme similar to that of the larger building. The Hawley Memorial Library was completed in November, 1931, at a cost of $87,000, exclusive of furnishings



The exterior is of rough-texture, buff brick with limestone trim and slate roof, the cupola and rain conductors being of lead. The windows are of steel with leaded glass, the latter clear in the lower windows, and obscured above by using rough tinted glass in ambers, greens, and purples graded from light to the deeper tones at the top

One-half the main room is devoted to the younger children, the other half to the older ones, and furniture has been provided suitable to each group



THE EIGHTY-FIRST IN A SERIES OF COLLECTIONS OF PHOTOGRAPHS
ILLUSTRATING VARIOUS MINOR ARCHITECTURAL DETAILS

ARCHITECTURE'S PORTFOLIO OF

EXTERIOR LETTERING

Subjects of previous portfolios are listed below at left and right of page

✣ 1926
- DORMER WINDOWS
- SHUTTERS AND BLINDS

✣ 1927
- ENGLISH PANELLING
- GEORGIAN STAIRWAYS
- STONE MASONRY TEXTURES
- ENGLISH CHIMNEYS
- FANLIGHTS AND OVERDOORS
- TEXTURES OF BRICKWORK
- IRON RAILINGS
- DOOR HARDWARE
- PALLADIAN MOTIVES
- GABLE ENDS
- COLONIAL TOP-RAILINGS
- CIRCULAR AND OVAL WINDOWS

✣ 1928
- BUILT-IN BOOKCASES
- CHIMNEY TOPS
- DOOR HOODS
- BAY WINDOWS
- CUPOLAS
- GARDEN GATES
- STAIR ENDS
- BALCONIES
- GARDEN WALLS
- ARCADES
- PLASTER CEILINGS
- CORNICES OF WOOD

✣ 1929
- DOORWAY LIGHTING
- ENGLISH FIREPLACES
- GATE-POST TOPS
- GARDEN STEPS
- RAIN LEADER HEADS
- GARDEN POOLS
- QUOINS
- INTERIOR PAVING
- BELT COURSES
- KEYSTONES
- AIDS TO FENESTRATION
- BALUSTRADES

Below are the subjects of forthcoming Portfolios

Entrance Driveways
AUGUST

Corbels
SEPTEMBER

Pew Ends
OCTOBER

Gothic Niches
NOVEMBER

Curtain Treatment at Windows
DECEMBER

Exterior Plasterwork
JANUARY

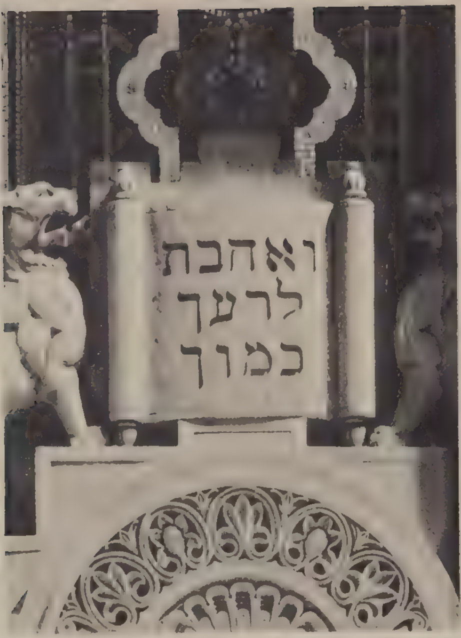
Photographs showing interesting examples under any of these headings will be welcomed by the Editor, though it should be noted that these respective issues are made up about six weeks in advance of publication date.

1930 ✣
- SPANDRELS
- CHANCEL FURNITURE
- BUSINESS BUILDING ENTRANCES
- GARDEN SHELTERS
- ELEVATOR DOORS
- ENTRANCE PORCHES
- PATIOS
- TREILLAGE
- FLAGPOLE HOLDERS
- CASEMENT WINDOWS
- FENCES OF WOOD
- GOTHIC DOORWAYS

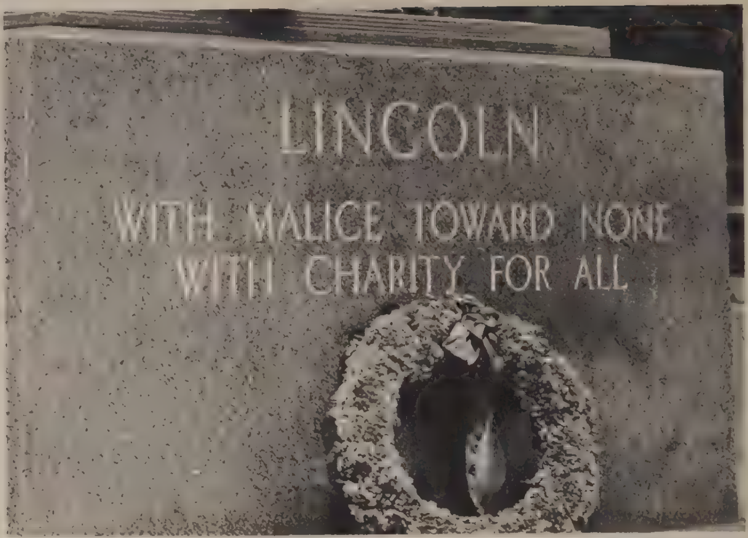
1931 ✣
- BANKING-ROOM CHECK DESKS
- SECOND-STORY PORCHES
- TOWER CLOCKS
- ALTARS
- GARAGE DOORS
- MAIL-CHUTE BOXES
- WEATHER-VANES
- BANK ENTRANCES
- URNS
- WINDOW GRILLES
- CHINA CUPBOARDS
- PARAPETS

1932 ✣
- RADIATOR ENCLOSURES
- INTERIOR CLOCKS
- OUTSIDE STAIRWAYS
- LEADED GLASS MEDALLIONS
- EXTERIOR DOORS OF WOOD
- METAL FENCES
- HANGING SIGNS
- WOOD CEILINGS
- MARQUISES
- WALL SHEATHING
- FRENCH STONEWORK
- OVER-MANTEL TREATMENTS

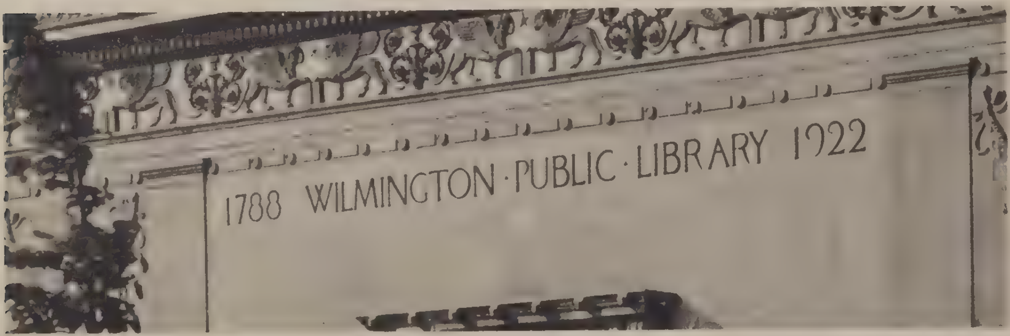
1933 ✣
- BANK SCREENS
- INTERIOR DOORS
- METAL STAIR RAILINGS
- VERANDAS
- THE EAGLE IN SCULPTURE
- EAVES RETURNS ON MASONRY
- GABLES



Simon & Simon

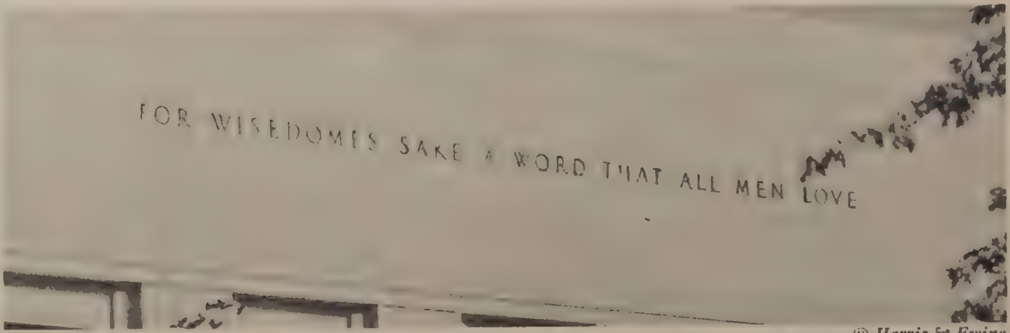


Charles Keck

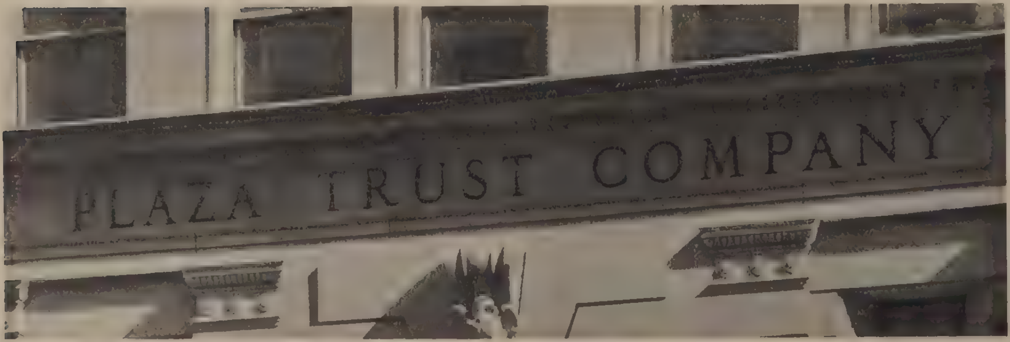


Tilton & Githens

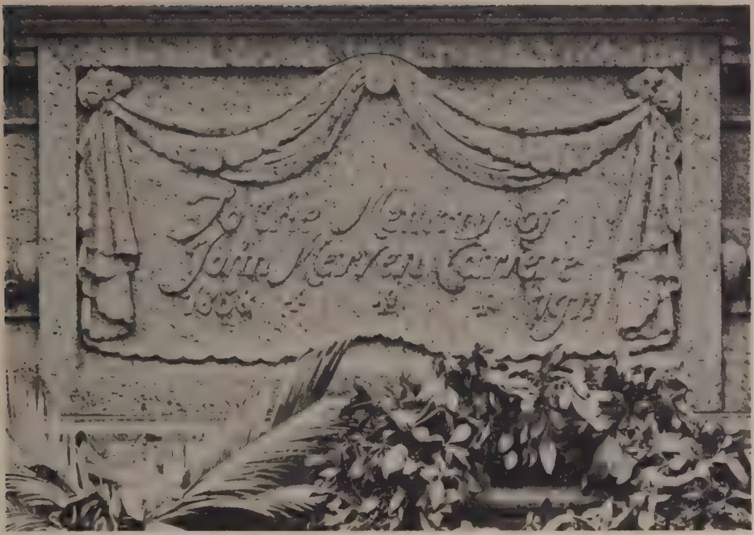
Paul P. Cret



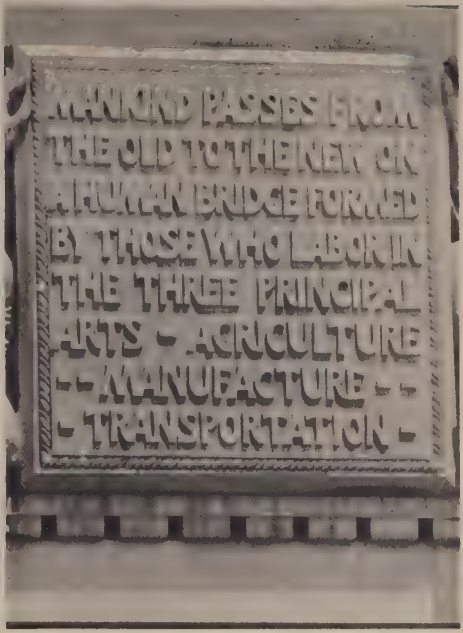
© Harris & Ewing



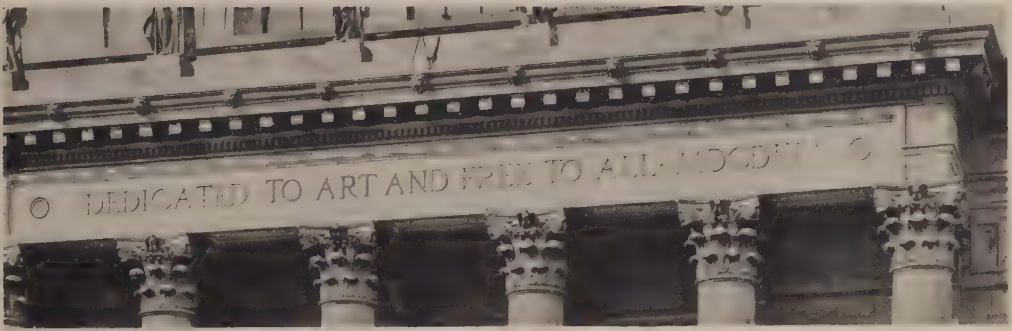
Corbett, Harrison & McMurray



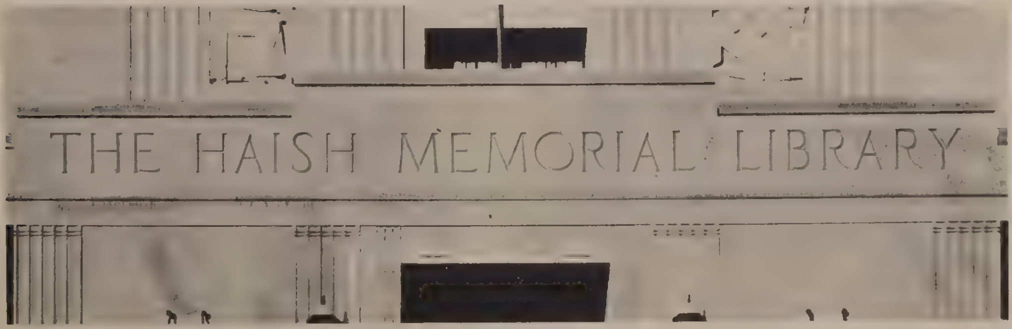
Thomas Hastings


MANKIND PASSES FROM THE OLD TO THE NEW ON A HUMAN BRIDGE FORMED BY THOSE WHO LABOR IN THE THREE PRINCIPAL ARTS - AGRICULTURE - - MANUFACTURE - - - TRANSPORTATION -

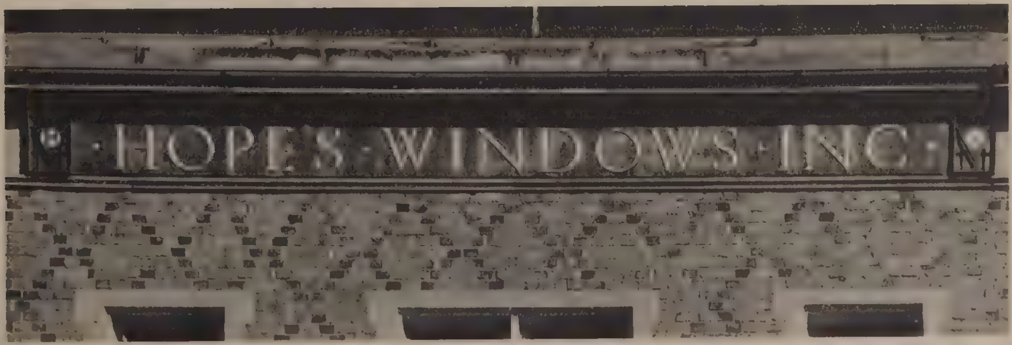
Albert Kahn, Inc.



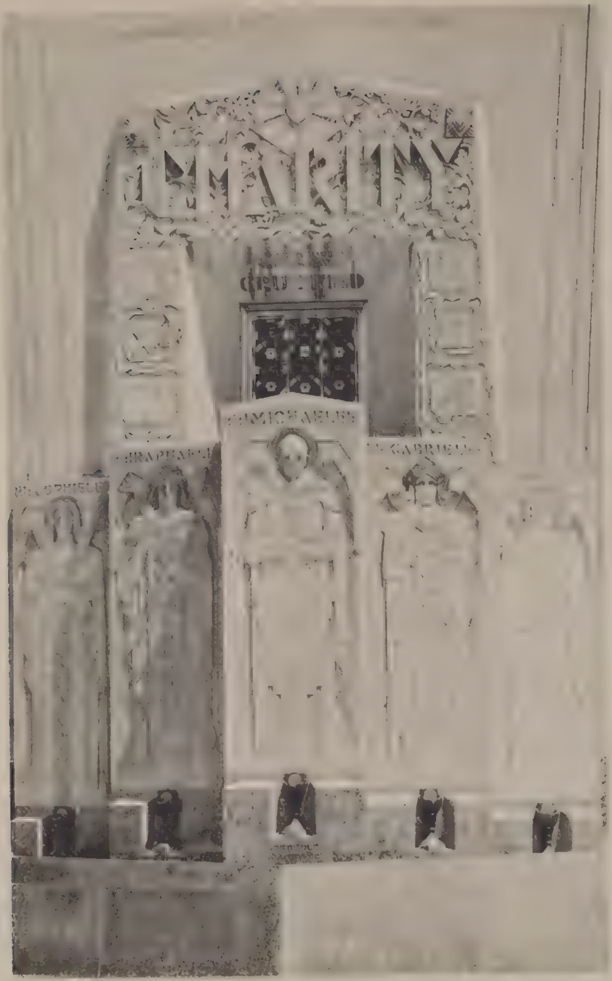
Cass Gilbert



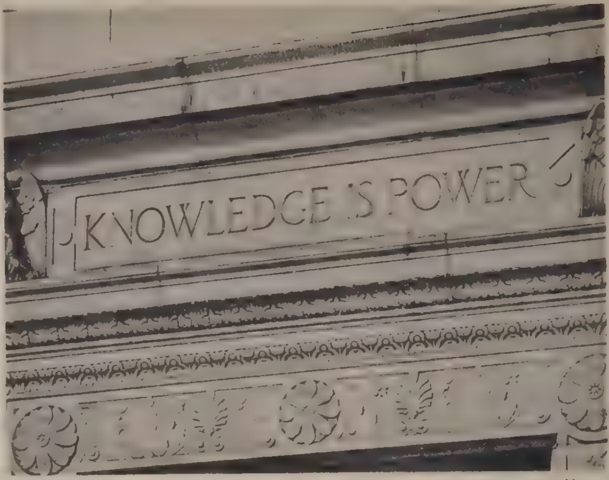
White & Weber



Bright tin flowed upon dull cast lead

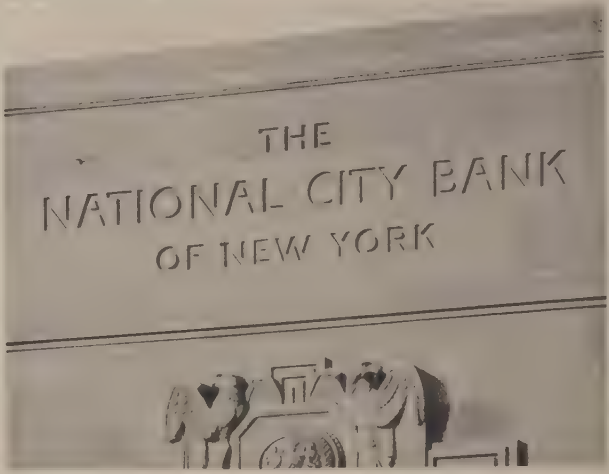


Henry J. McGill

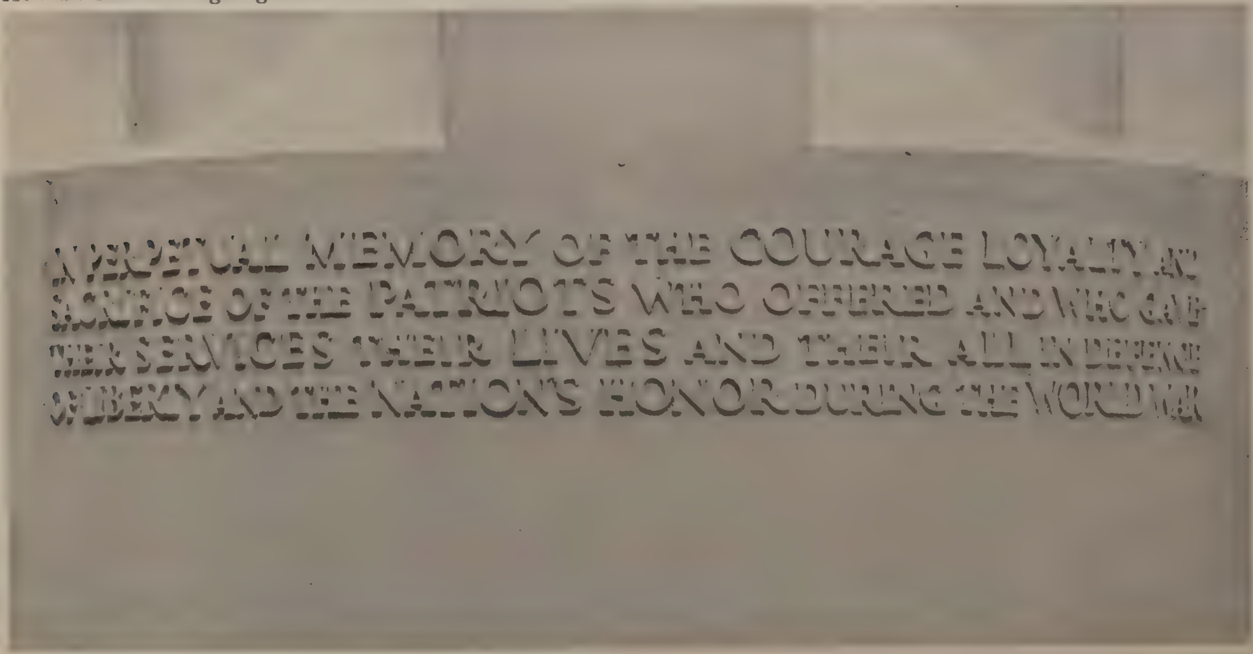


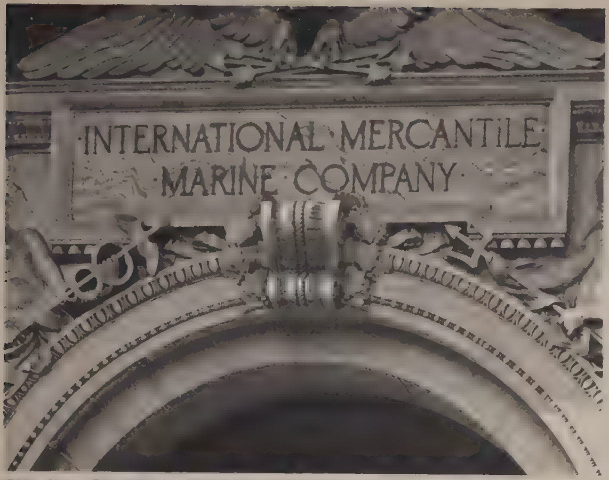
Cass Gilbert

Walker & Gillette

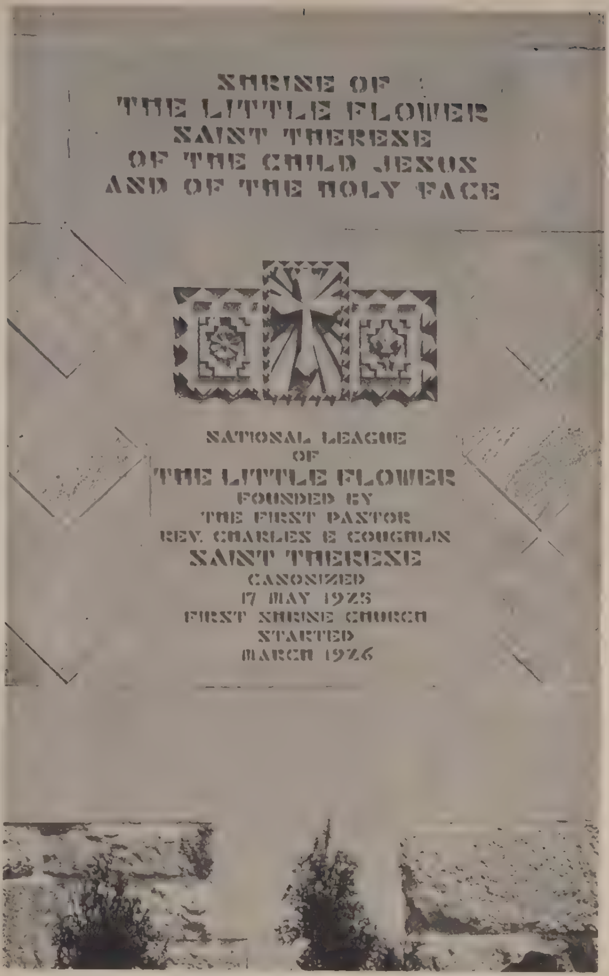


H. Van Buren Magonigle

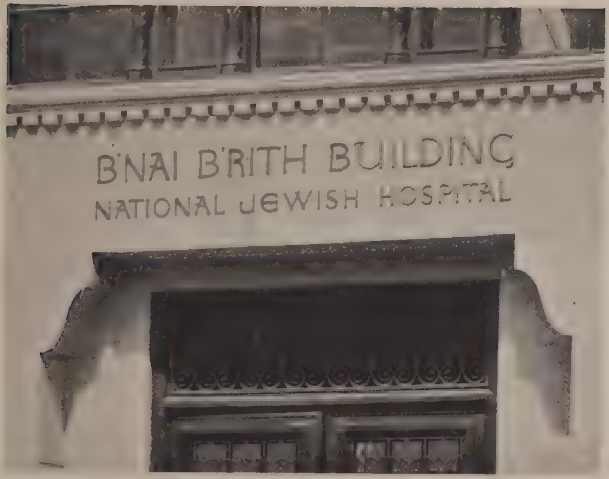

IN PERPETUAL MEMORY OF THE COURAGE LOYALTY AND
SACRIFICE OF THE PATRIOTS WHO OFFERED AND WHO GAVE
THEIR SERVICES THEIR LIVES AND THEIR ALL IN DEFENSE
OF LIBERTY AND THE NATION'S HONOR DURING THE WORLD WAR



Walter B. Chambers

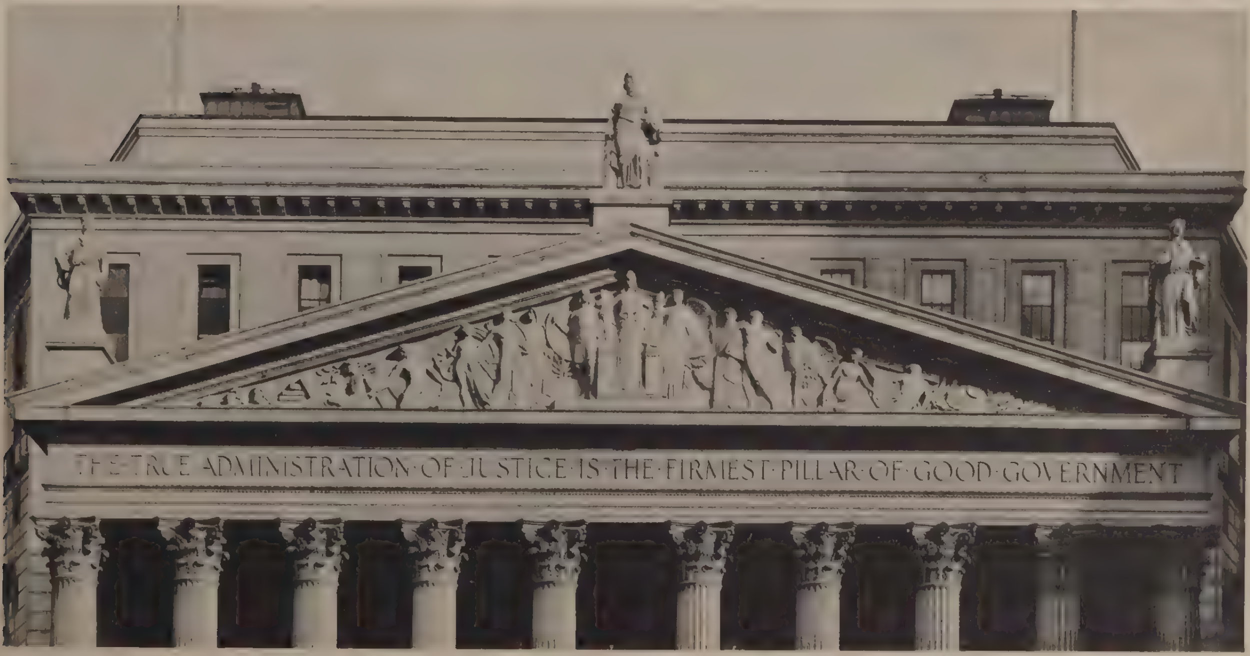


Henry J. McGill

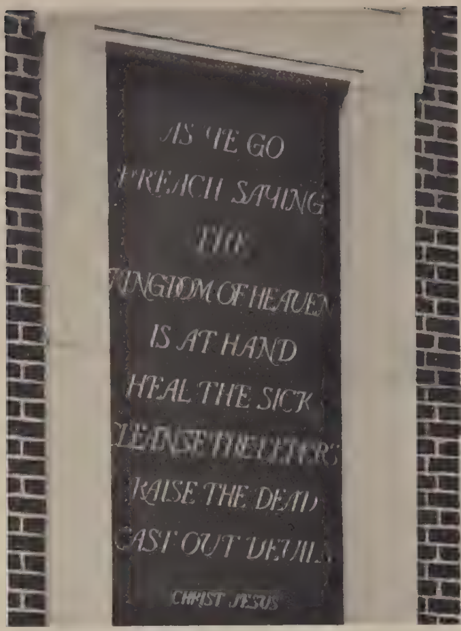


W. E. and A. A. Fisher

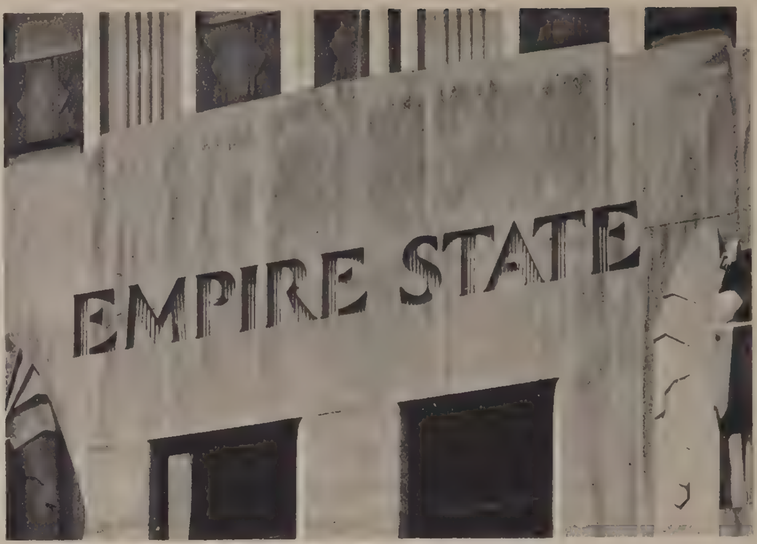
Guy Lowell


THE TRUE ADMINISTRATION OF JUSTICE IS THE FIRMEST PILLAR OF GOOD GOVERNMENT

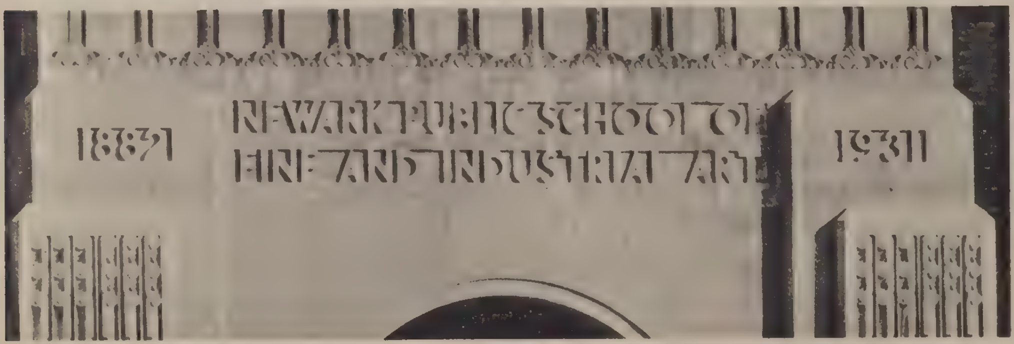
U OF I
LIBRARY



Delano & Aldrich

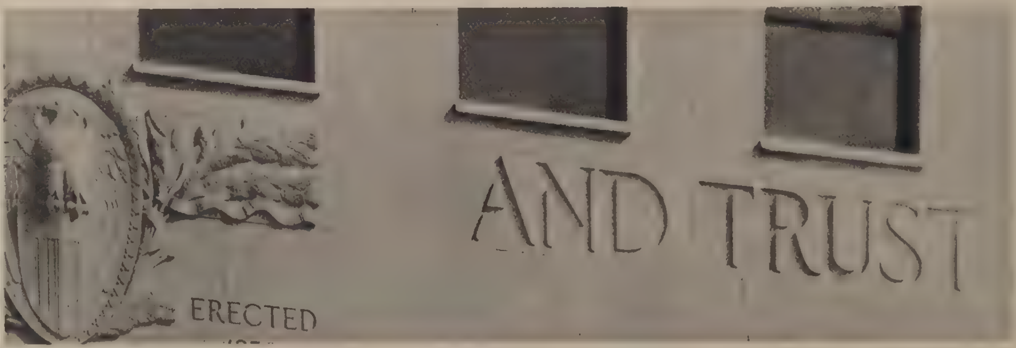


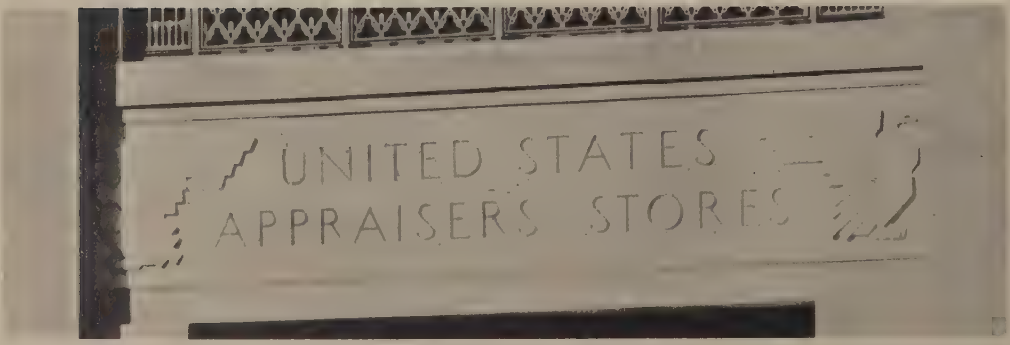
Shreve, Lamb & Harmon



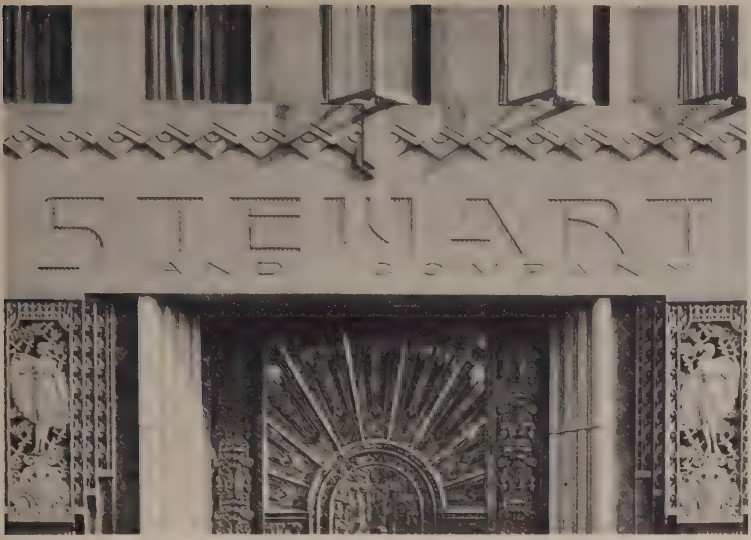
Guilbert & Betelle

Childs & Smith

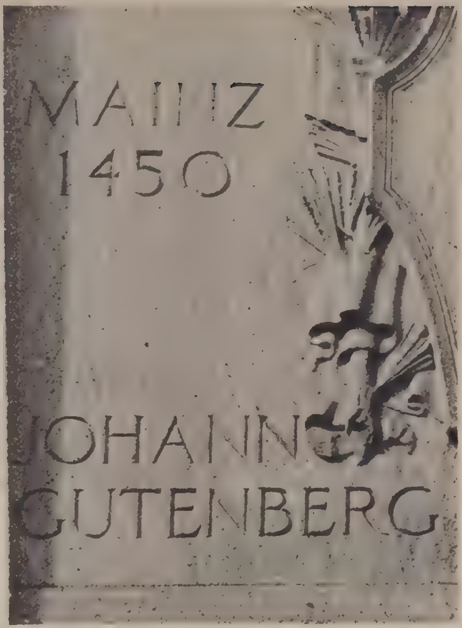




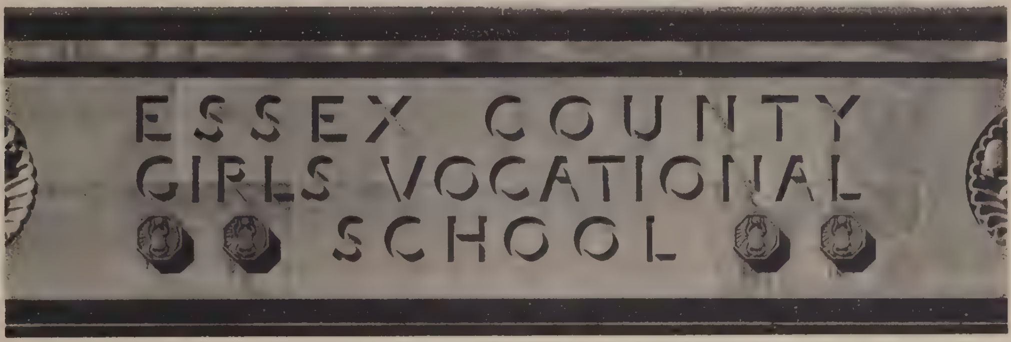
*The Firm of
Ely Jacques Kahn*



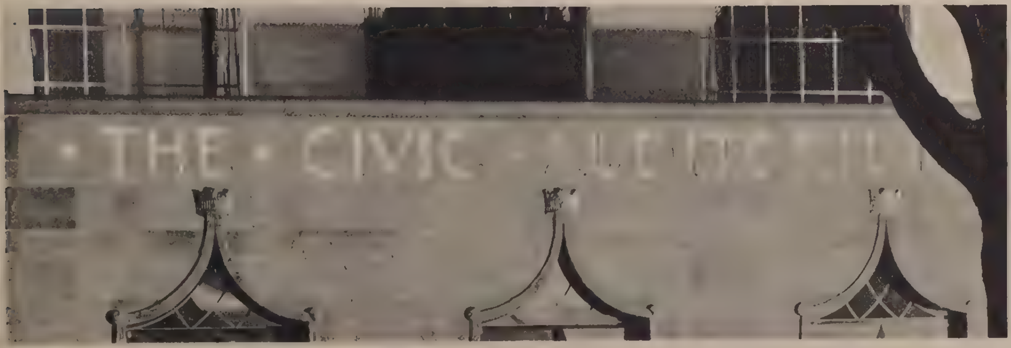
Warren & Wetmore



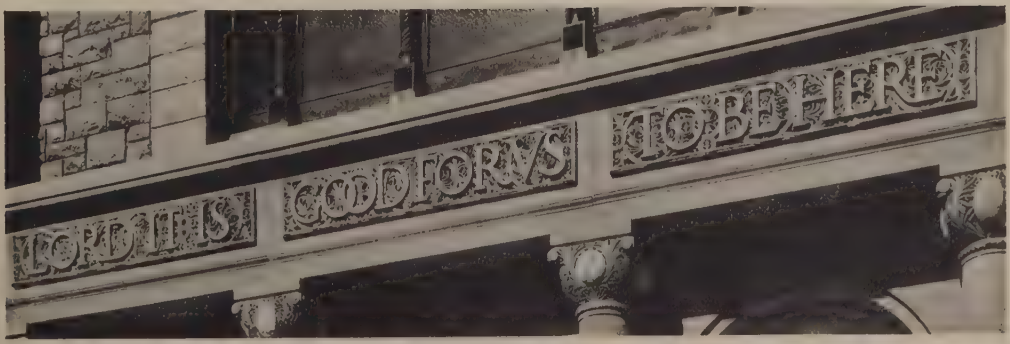
Cass Gilbert



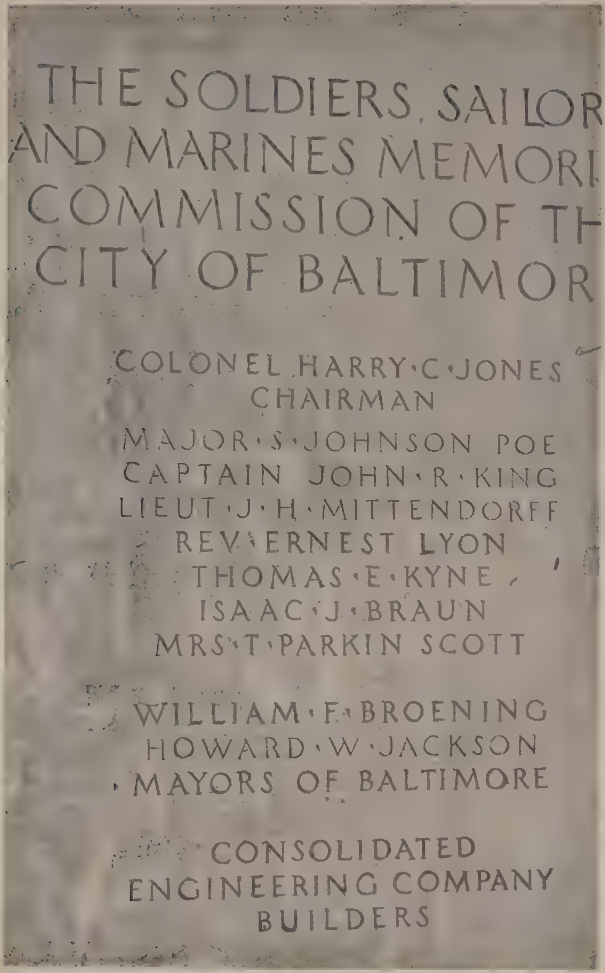
Guilbert & Betelle



Aymar Embury II



Henry D. Dagit & Sons



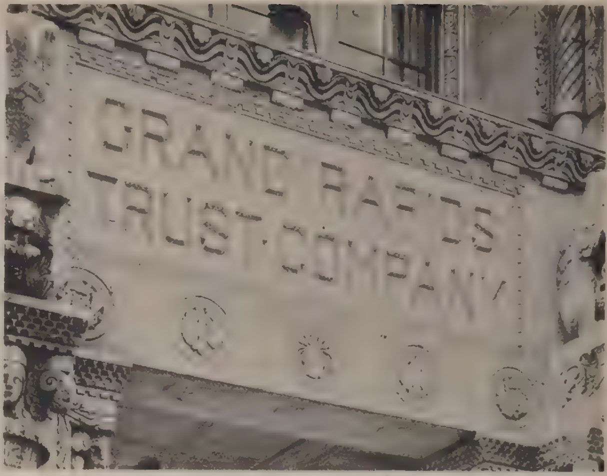
THE SOLDIERS, SAILOR
AND MARINES MEMORI
COMMISSION OF TH
CITY OF BALTIMOR

COLONEL HARRY·C·JONES
CHAIRMAN
MAJOR·S·JOHNSON POE
CAPTAIN JOHN·R·KING
LIEUT·J·H·MITTENDORFF
REV·ERNEST LYON
THOMAS·E·KYNE
ISAAC·J·BRAUN
MRS·T·PARKIN SCOTT

WILLIAM·F·BROENING
HOWARD·W·JACKSON
MAYORS OF BALTIMORE

CONSOLIDATED
ENGINEERING COMPANY
BUILDERS

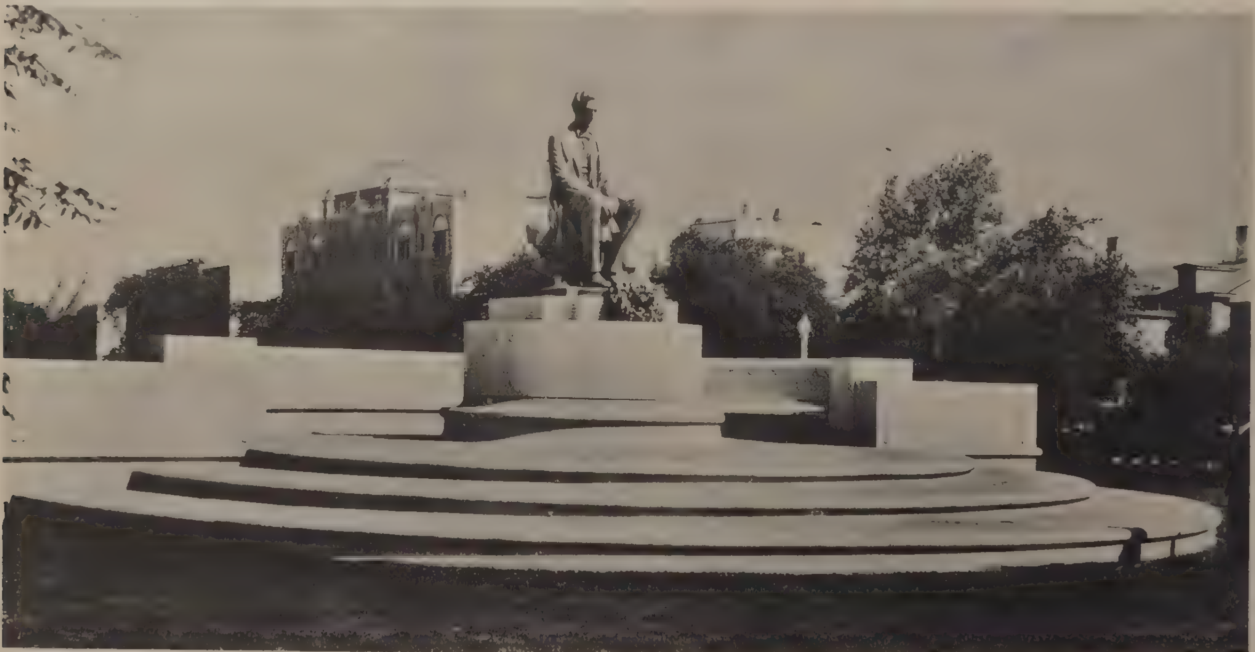
Laurence Hall Fowler



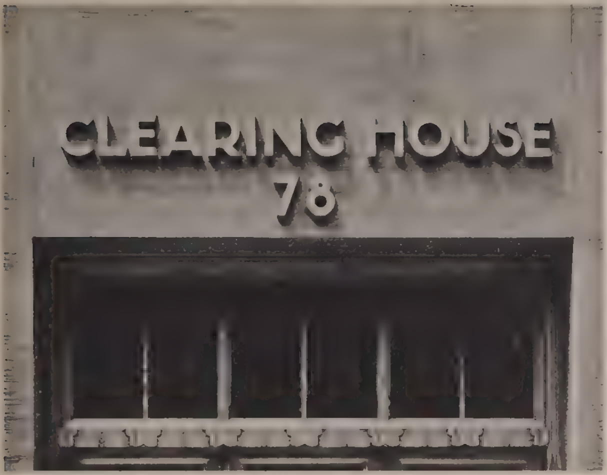
Smith, Hinchman & Grylls

Hector O. Hamilton

James Earl Fraser

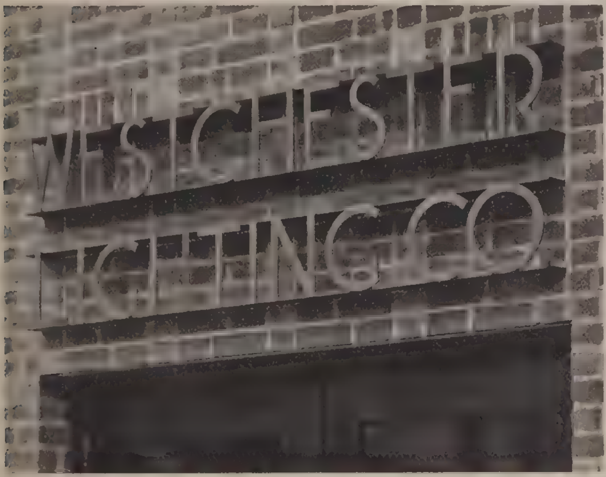


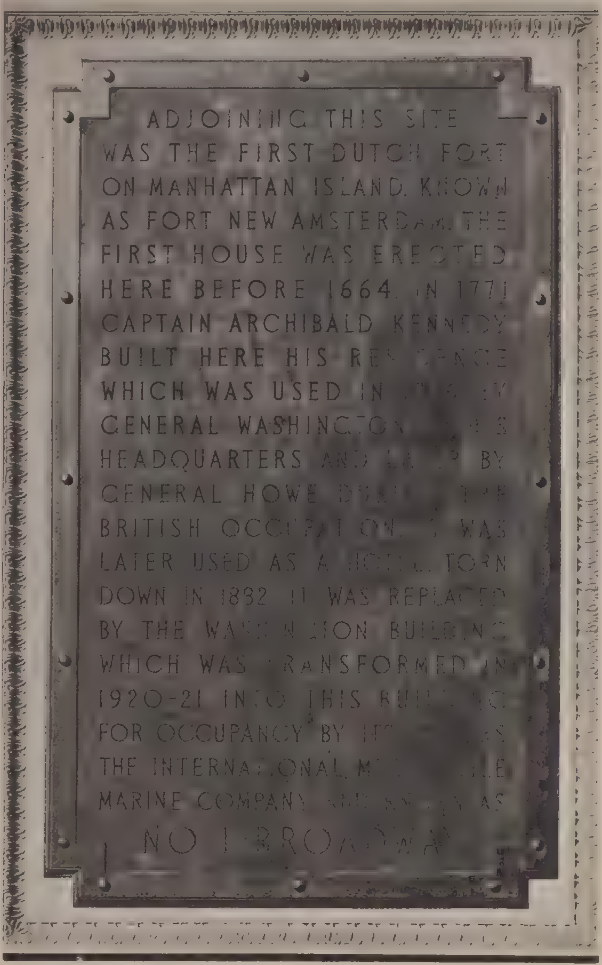
© Irving Underhill, Inc.



Starrett & Van Vleck

Julius Gregory

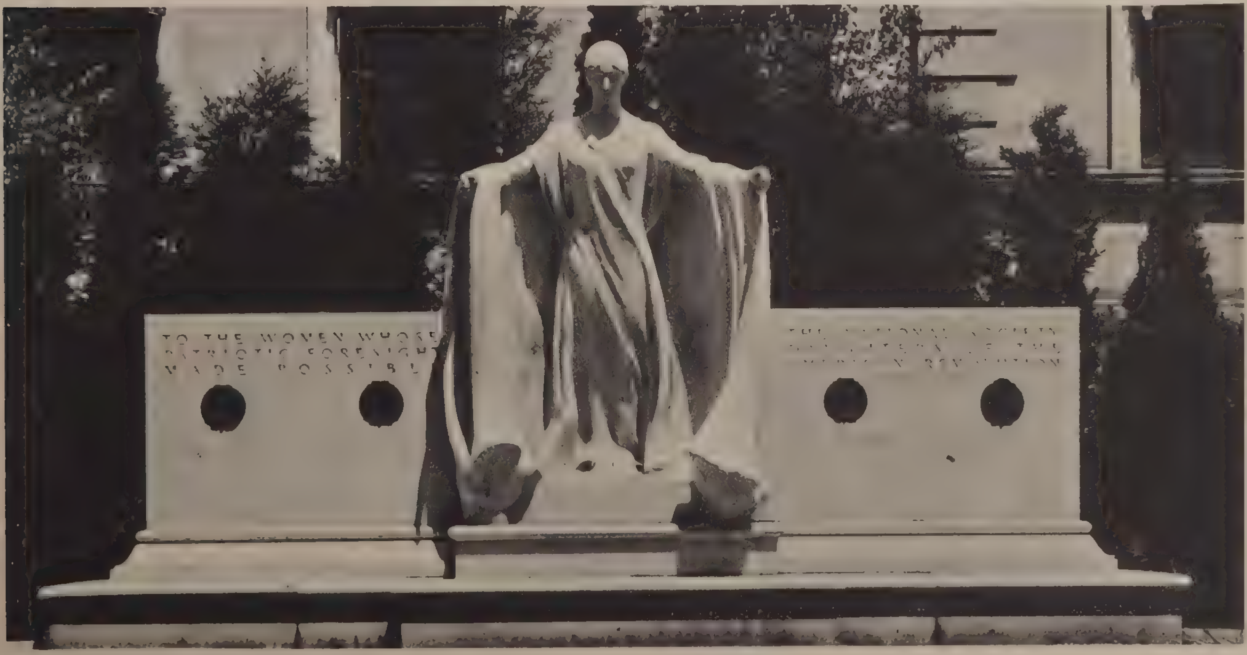


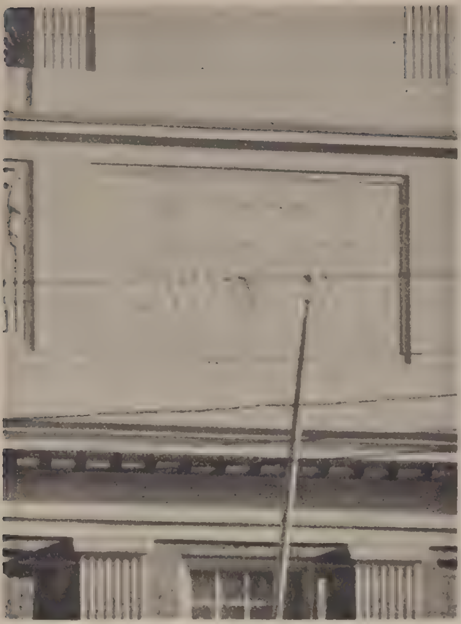


ADJOINING THIS SITE
WAS THE FIRST DUTCH FORT
ON MANHATTAN ISLAND. KNOWN
AS FORT NEW AMSTERDAM. THE
FIRST HOUSE WAS ERECTED
HERE BEFORE 1664. IN 1771
CAPTAIN ARCHIBALD KENNEDY
BUILT HERE HIS RESIDENCE
WHICH WAS USED IN [illegible] BY
GENERAL WASHINGTON AS HIS
HEADQUARTERS AND LATER BY
GENERAL HOWE DURING THE
BRITISH OCCUPATION. IT WAS
LATER USED AS A HOTEL. TORN
DOWN IN 1832 IT WAS REPLACED
BY THE WASHINGTON BUILDING
WHICH WAS TRANSFORMED IN
1920-21 INTO THIS BUILDING
FOR OCCUPANCY BY [illegible]
THE INTERNATIONAL MERCANTILE
MARINE COMPANY AND KNOWN AS
NO 1 BROADWAY

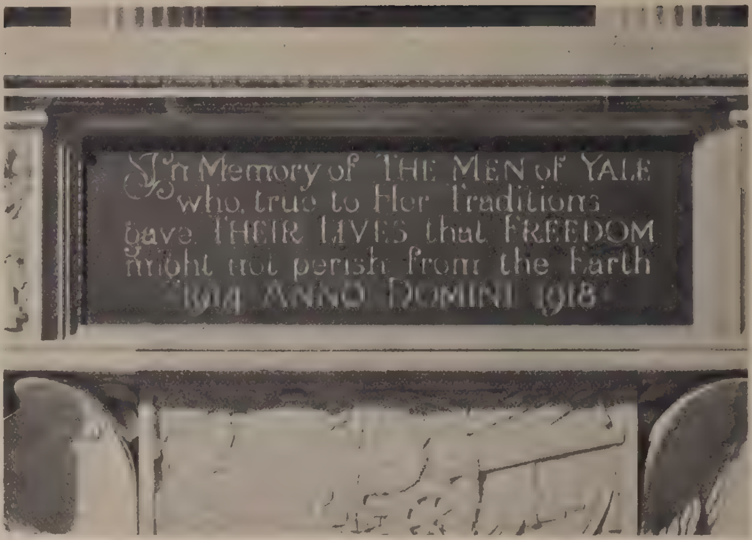
Egerton Swartwout

Mrs. Harry Payne Whitney

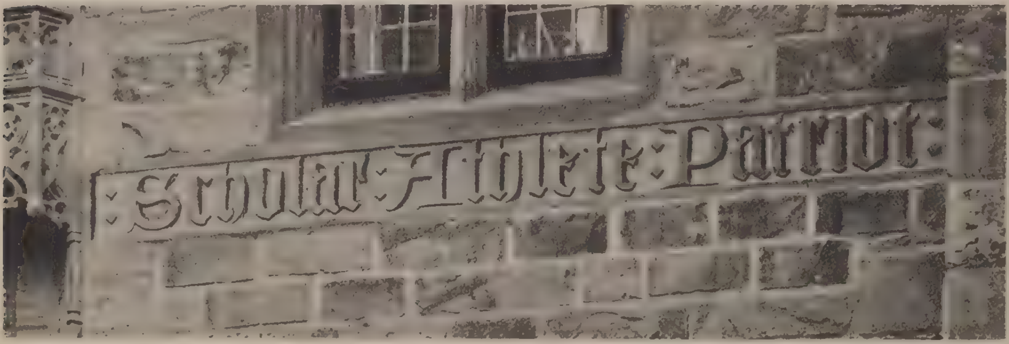




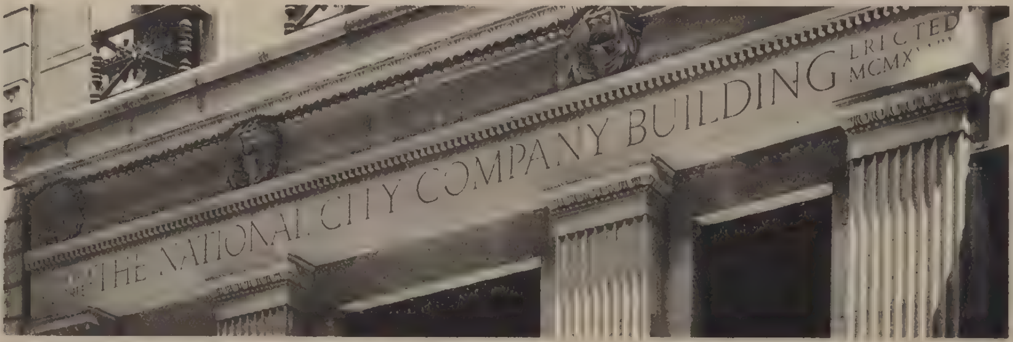
Kilham, Hopkins & Greeley


In Memory of THE MEN of YALE
who, true to Her Traditions
gave THEIR LIVES that FREEDOM
might not perish from the Earth
1914 ANNO DOMINI 1918

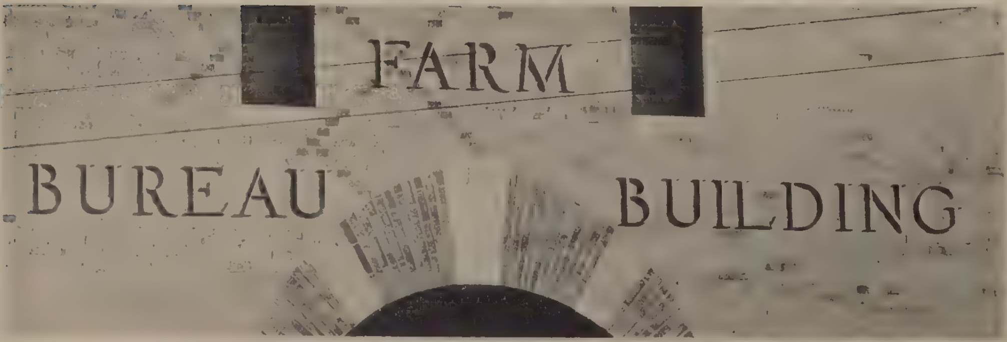
Thomas Hastings



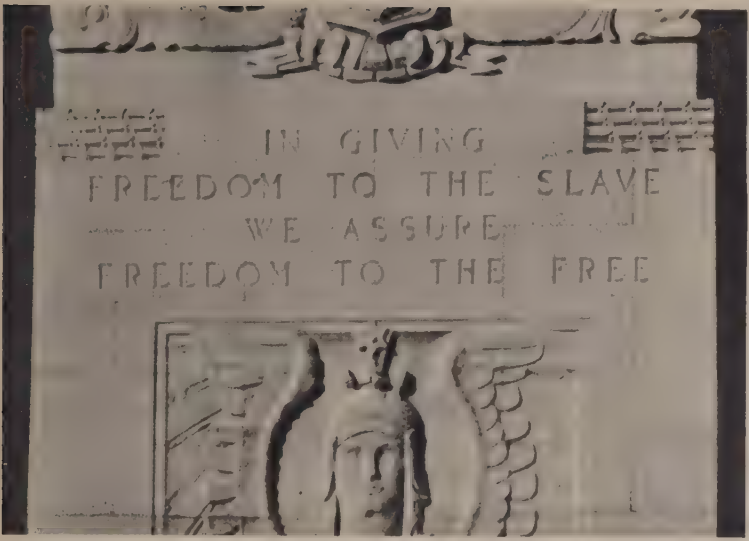
James Gamble Rogers



McKim, Mead & White

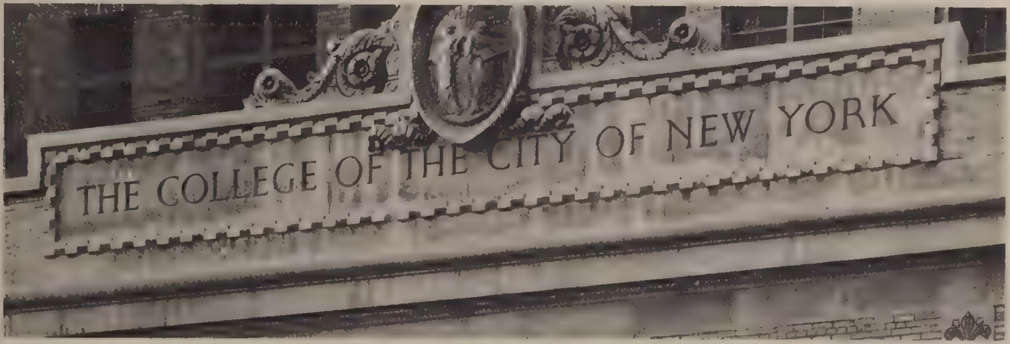


George Poppo Wearda

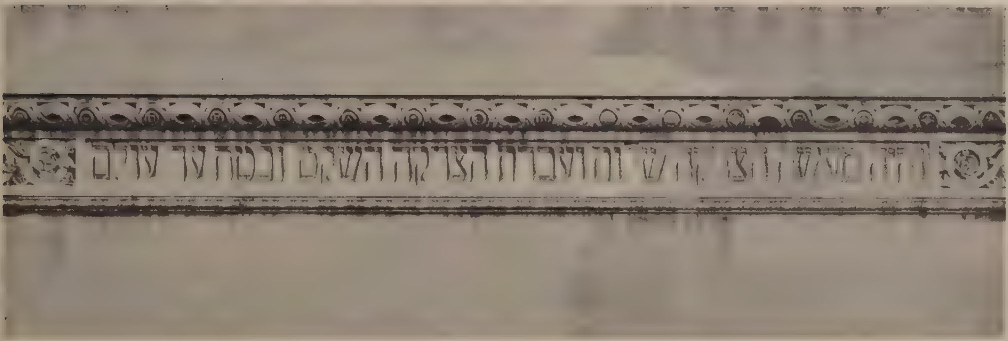


Lord & Hewlett

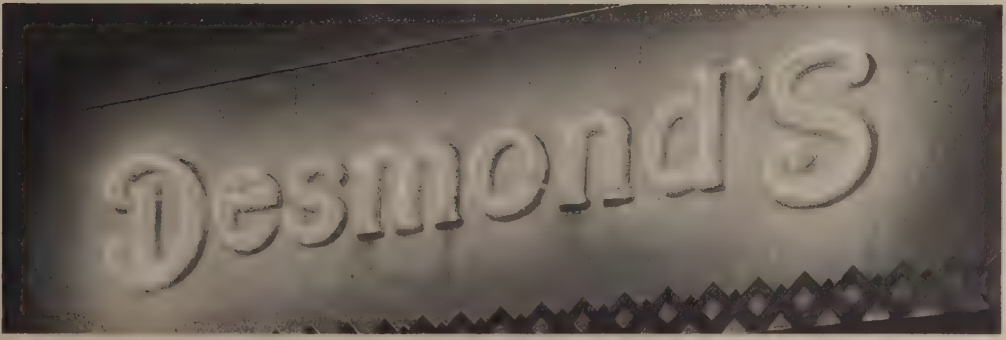
Irwin T. Catherine



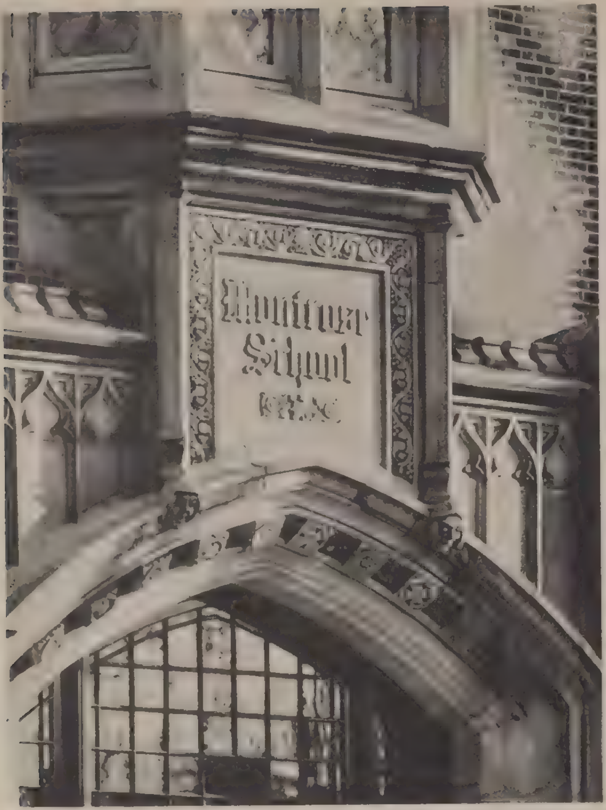
Thompson, Holmes & Converse



Robert D. Kohn, Charles Butler, Clarence S. Stein; Mayers, Murray & Phillip

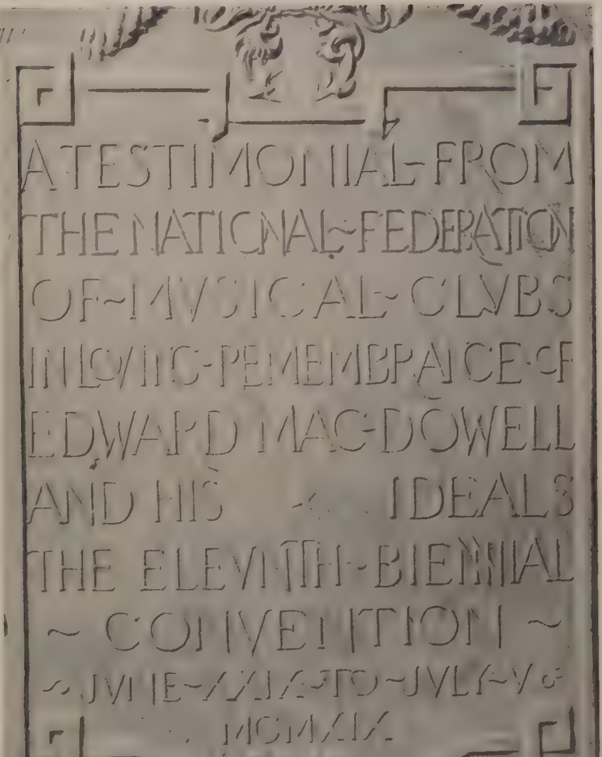


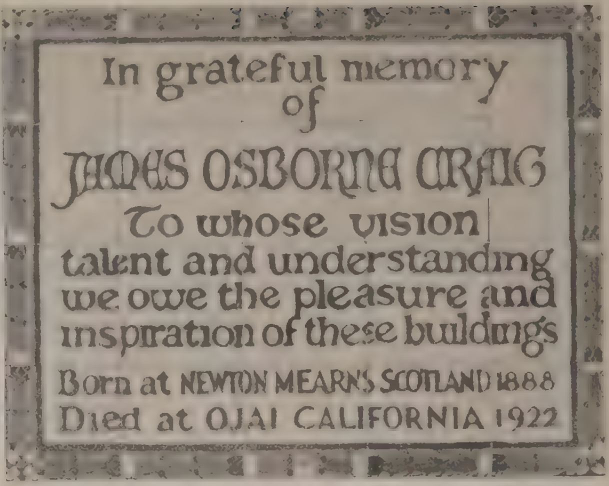
Gilbert Stanley Underwood



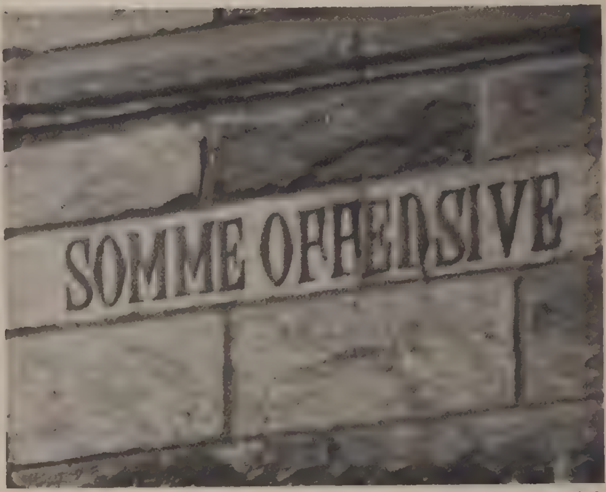
Guilbert & Betelle

Willard Dryden Paddock



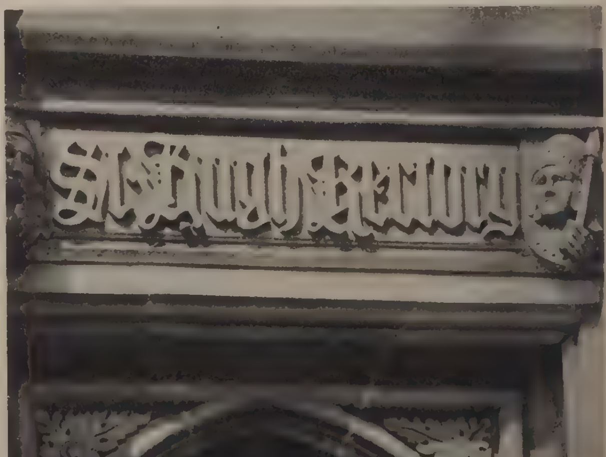


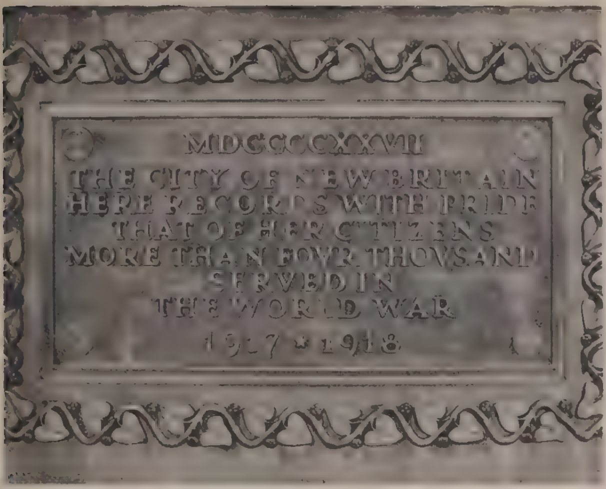
Bernhard Hoffmann



Walter T. Karcher & Livingston Smith

Henry D. Dagit & Sons





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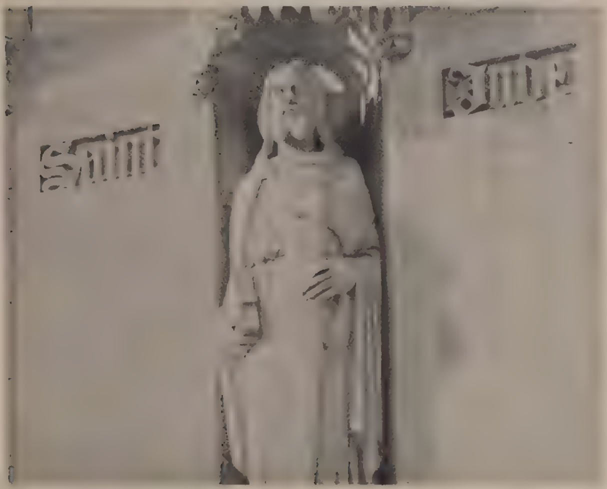

Henry D. Dagit & Sons

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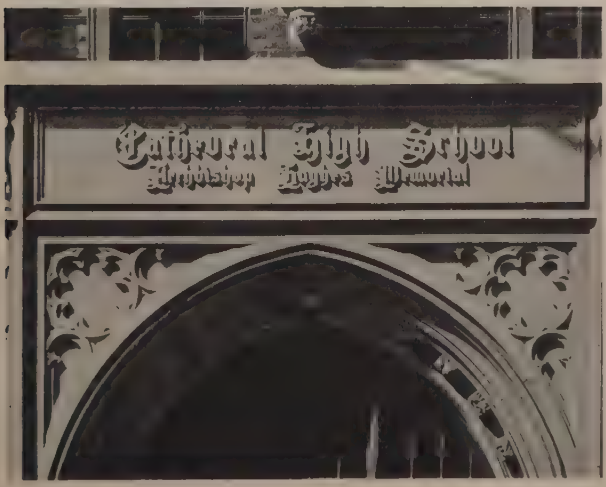
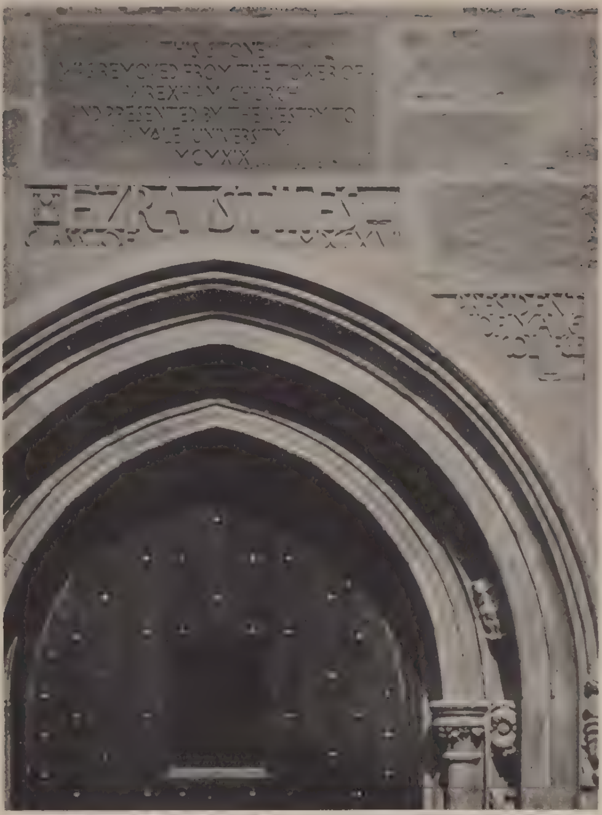
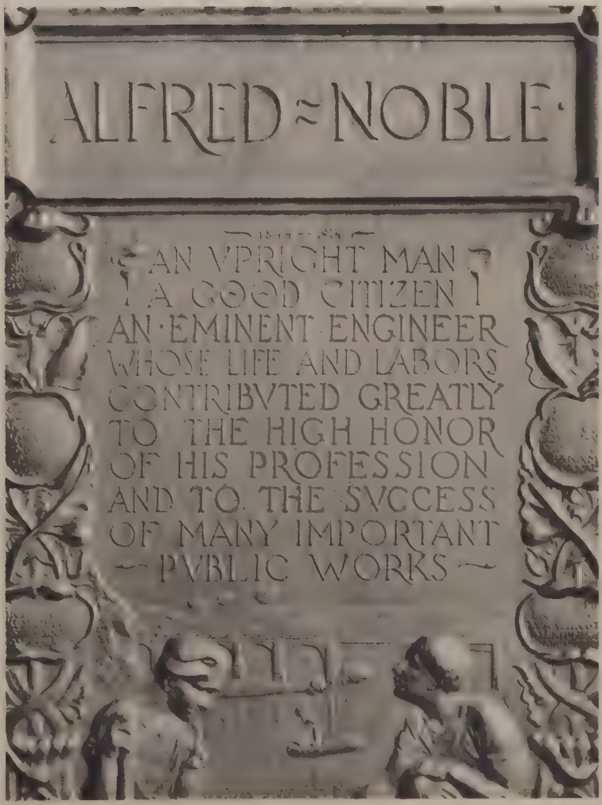
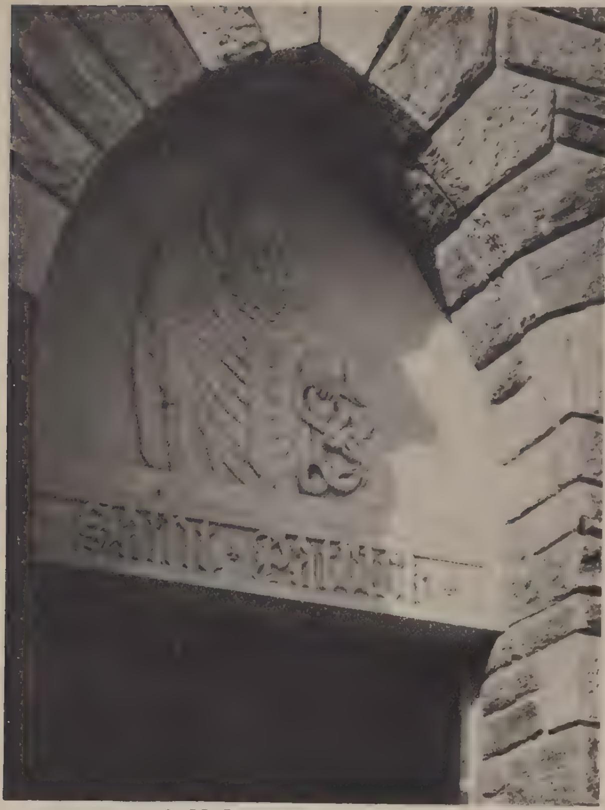




James Gamble Rogers

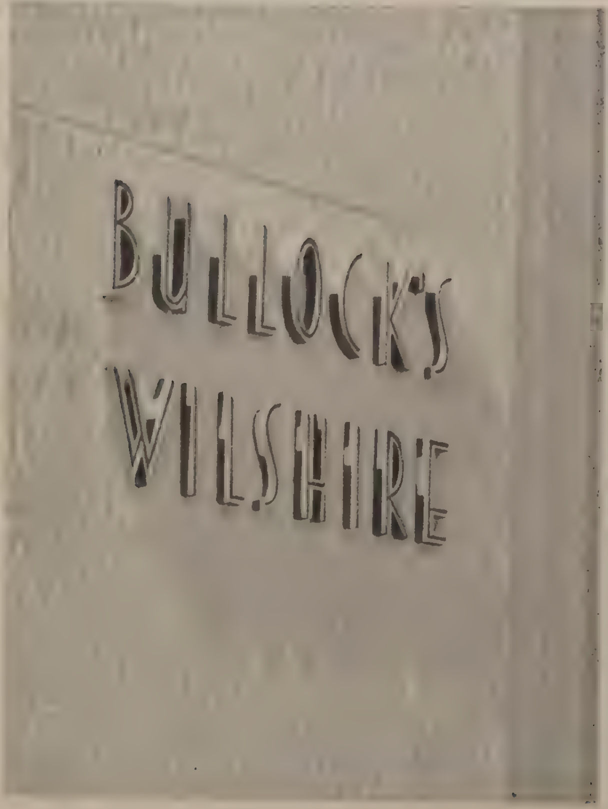
Willard Dryden Paddock

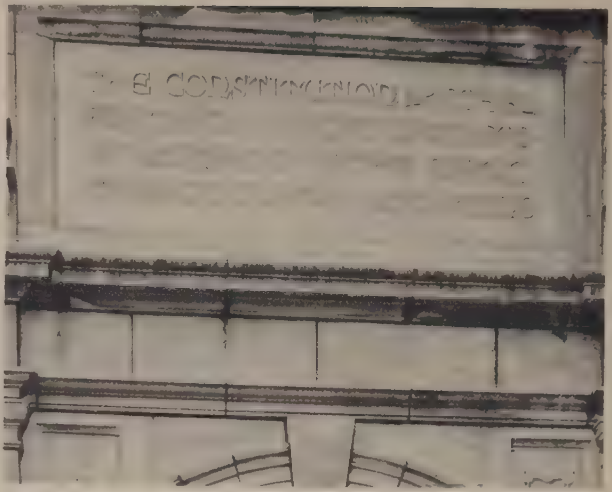




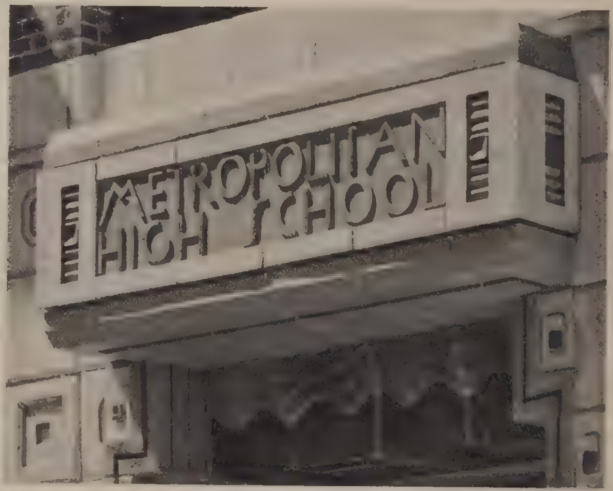
Henry D. Dagit & Sons

John and Donald Parkinson



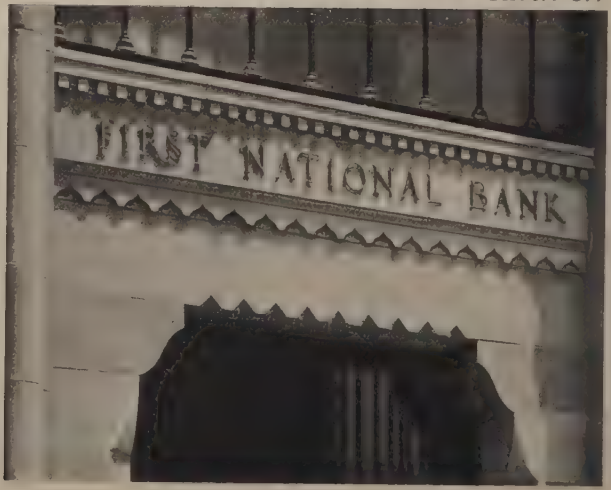


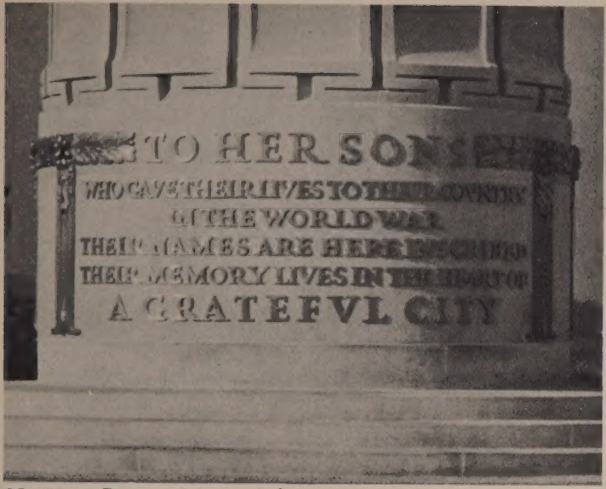
York & Sawyer



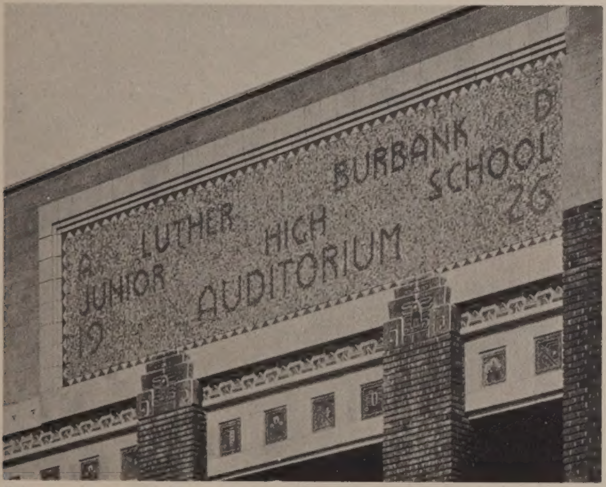
Noerenberg & Johnson

Robert Orr



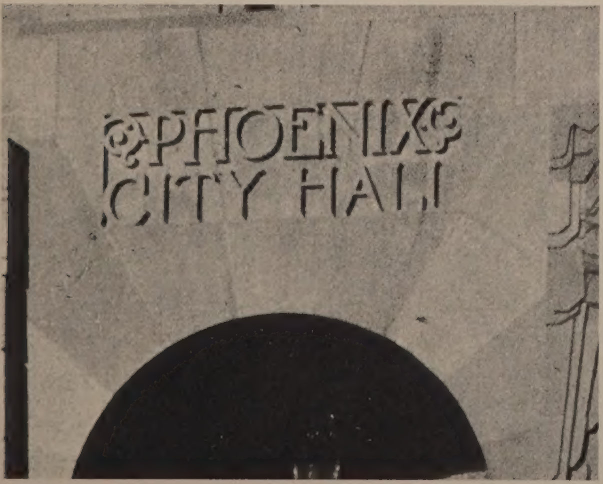

TO HER SONS
WHO GAVE THEIR LIVES TO THEIR COUNTRY
IN THE WORLD WAR
THEIR NAMES ARE HERE INSCRIBED
THEIR MEMORY LIVES IN THE HEART OF
A GRATEFVL CITY

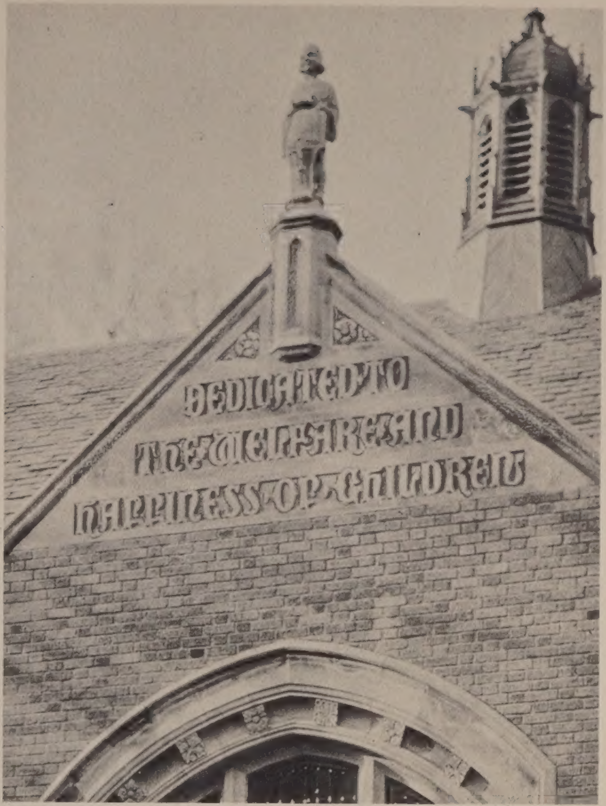
H. Van Buren Magonigle



Noerenberg & Brandener

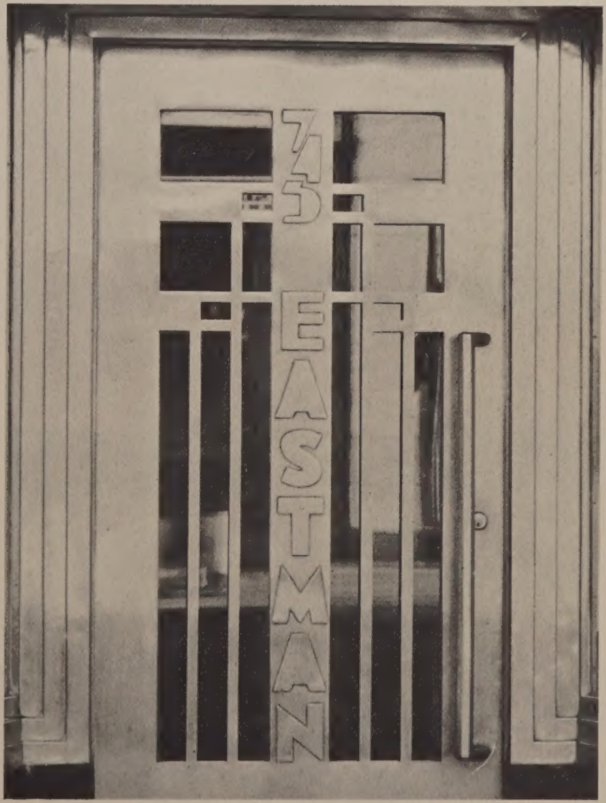
Lescher & Maloney

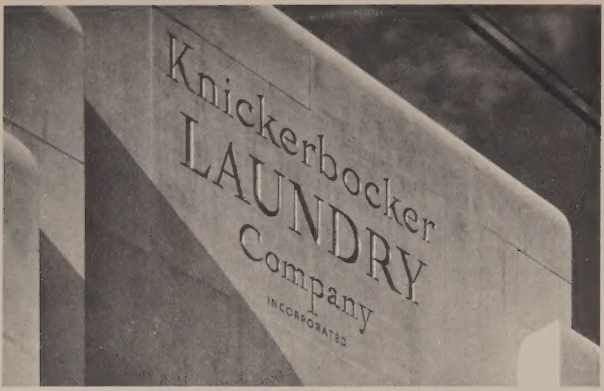




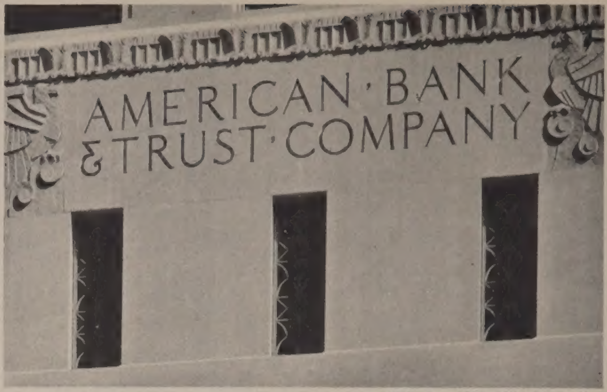
W. F. Brooks

Walter D. Teague

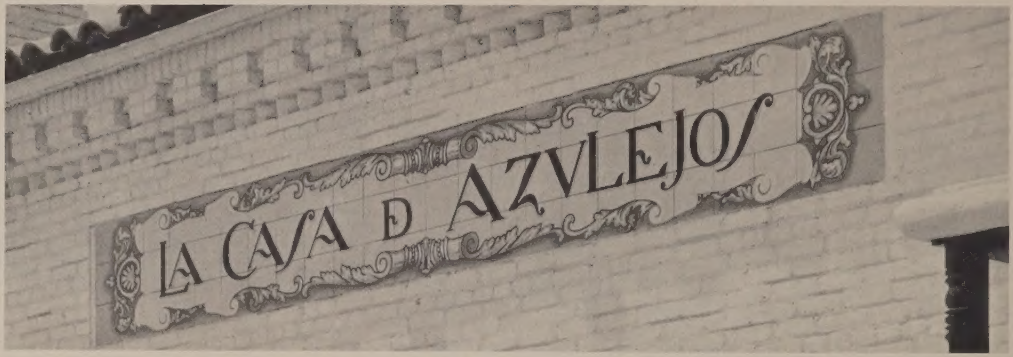




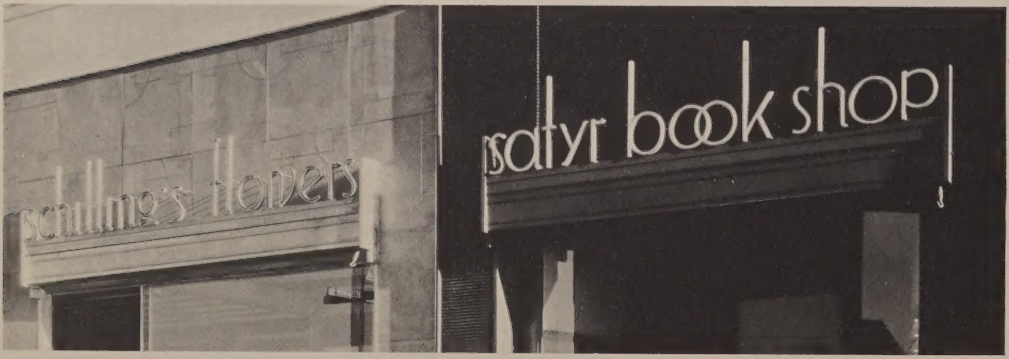
Irving M. Fenichel



Moise H. Goldstein

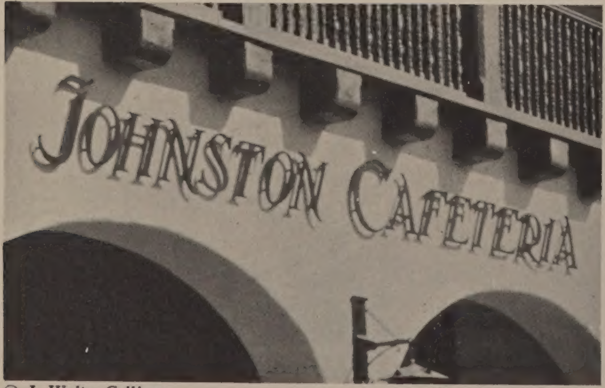


Marshall P. Wilkinson



Morgan, Walls & Clements

Edwards, Plunkett & Howell



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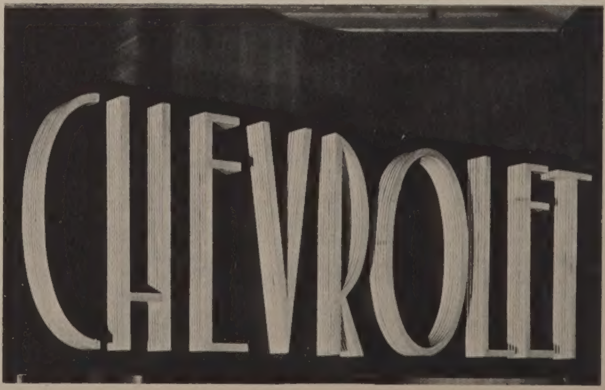
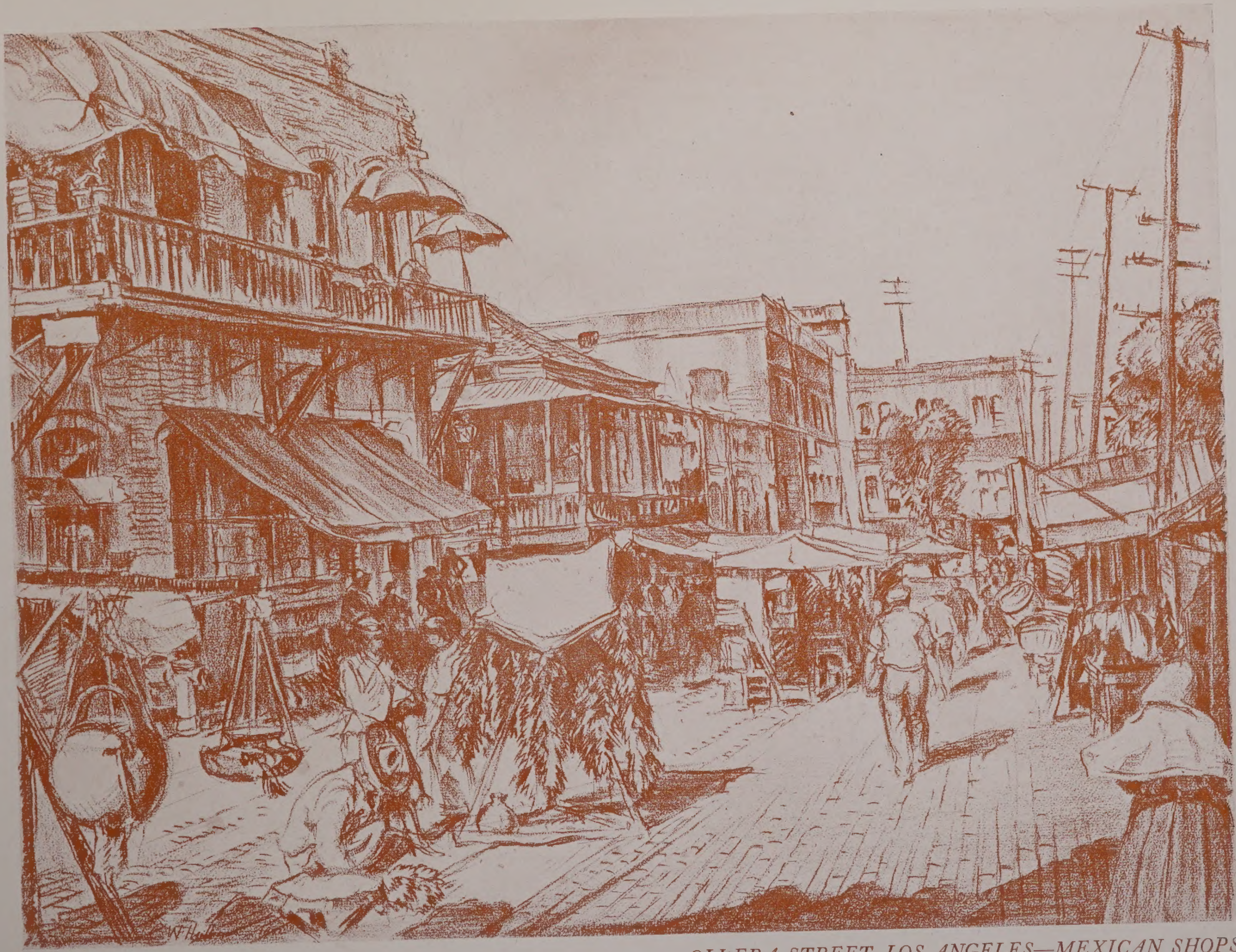
Everett Worthington





OLVERA STREET, LOS ANGELES—MEXICAN SHOPS

From the study in sanguine crayon on charcoal paper by Carl W. Heilborn